114-439

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

No. 233.

JOHN DOBSON AND JAMES DOBSON, TRADING AS JOHN AND JAMES DOBSON, AND ALSO AS "THE FALLS OF SCHUYLKILL CARPET MILLS," APPELLANTS,

vs.

THE BIGELOW CARPET COMPANY.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

FILED JULY 7, 1882.

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1 In the Circuit Court of the United States in and for the Eastern District of Pennsylvania, in the Third Circuit. In Equity.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON, trading as John and James Dobson, and also as "The Falls of Schuylkill Carpet Mills."

Pleas and proceedings before the honorable the judges of the circuit court of the United States in and for the eastern district of Pennsylvania, in the third circuit, of April session, 1879, No. 34.—

It is thus contained:

Be it remembered that on the 7th day of May, A. D. 1879, The Bigelow Carpet Company, by Joseph C. Fraley, A. v. Briesen, Esqs., their solicitors, come into our said court here and file of record their bill of complaint against John Dobson and James Dobson, doing business under the name and style of John and James Dobson, and of "The Falls of Schuylkill Carpet Mills," which said bill, being read, is as follows, to wit:

2 Circuit Court of the United States for the Eastern District of Pennsylvania. In Equity.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON.

To the honorable the judges of the circuit court of the United States for the eastern district of Pennsylvania:

The Bigelow Carpet Company, a corporation duly organized under the laws of the State of Massachusetts, and doing business at Clinton, Worcester county, Massachusetts, and also at the city of New York, county and State of New York, brings this its bill of complaint against John Dobson and James Dobson, individually and collectively, both being residents of Philadelphia, Pennsylvania, and doing business in the name and style of John & James Dobson, and also in the name and style of "The Falls of Schuylkill Carpet Mills," at Philadelphia, State of Pennsylvania, and thereupon your orator complains and says:

That one Charles Magee was and is the original and first inventor and producer of a new and original design for carpets, fully described in the letters patent hereinafter mentioned, and which had not been known or used before said Charles Magee's said invention and production, and which was not for more than two years before his application for a patent, as hereinafter mentioned, in public use, or on sale with his consent or allowance, and which he, said Charles Magee, has invented and produced by his own industry, genius, efforts, and expense.

And your orator, on information and belief, further shows unto your honors that your orator having, by assignment, duly executed and recorded in the United States Patent Office, acquired from said

Charles Magee all the said Charles Magee's right, title, and in-
3 terest in and to said invention, and the letters patent, when issued therefor, did, on the 15th day of October, 1878, upon due application therefor, obtain letters patent of the United States for said invention, in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior, and countersigned by the Commissioner of Patents of the United States, bearing date the day and year last aforesaid, and numbered 10870, whereby there was granted and secured to your orator as assignee of said Charles Magee, and to your orator's assigns, or intended so to be, for the term of three and one-half years from and after the date of said letters patent, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said invention and design, as set forth in said letters patent, which, or a duly certified copy of which, is ready here in court to be produced, and by virtue whereof your orator became and now is the sole owner of all the rights and privileges granted and secured, or intended to be granted and secured, in and by said letters patent.

And your orator further shows unto your honors that by virtue of the premises your orator became, and now is, the sole and exclusive owner of said letters patent, and the inventions and design described therein, and of all the rights and privileges granted and secured, or intended to be granted and secured, thereby. And that your orator has invested and expended large sums of money, and has been to great trouble in and about said invention, and for the purpose of carrying on the business of manufacturing and selling carpets which embody said design, and making the same profitable to itself and useful to the public, and that said invention has been, and is, of great benefit and advantage; and that large quantities of carpets were made according to said invention, and sold by your orator, to the great advantage of the public; and that the public have generally acknowledged and acquiesced in the aforesaid rights of your orator, and your orator believes that it will realize and receive large gains and profits therefrom if infringements by said defendants and their confederates shall be prevented.

Yet the said defendants, well knowing the premises and the rights secured to your orator as aforesaid, but contriving to injure your orator, and to deprive it of the benefits and advantages which might
4 and otherwise would accrue unto your orator from said invention, ever after the issuing of the said letters patent as aforesaid, and before the commencement of this suit, did, as your orator is informed and believes, without the license or allowance, and against the will of your orator, and in violation of its rights, and in infringement of the aforesaid letters patent, at the city of Philadelphia, and at other places, unlawfully and wrongfully, and in defiance of the rights of your orator, make, construct, use, and vend to others to be used the said invention, and did make, construct, use, and vend to others to be used carpets made according to and employing and containing said invention, and that the said defendants and their confederates still continue so to do; and that they are threatening to make the

aforesaid carpets in large quantities, and to supply the market therewith, and to sell the same.

All in defiance of the rights acquired by and secured to your orator as aforesaid, and to your orator's great and irreparable loss and injury, and by which your orator has been and still is being deprived of great gains and profits which it might and otherwise would have obtained, but which have been received and enjoyed, and are being received and enjoyed, by the said defendants by and through their aforesaid unlawful acts and doings.

And your orator further shows unto your honors, on information and belief, that said defendants have made and sold, and caused to be made and sold, large quantities of said carpets, and have a large quantity on hand which they are offering for sale, and have made and realized large profits and advantages therefrom; but to what extent and how much exactly your orator does not know, and prays a discovery thereof. And your orator says that the use of the said invention by said defendants, and their preparation for and avowed determination to continue the same and their other aforesaid unlawful acts, in disregard and defiance of the rights of your orator, have the effect to, and do, encourage and induce others to venture to infringe said patent in disregard of your orator's rights.

And your orator prays that said defendants, John Dobson and James Dobson, individually, and also in the name and style of John and James Dobson, and of "The Falls of Schuylkill Carpet Mills," and their and each of their servants, agents, attorneys, and workmen, and each and every of them, may be restrained and enjoined, provisionally and perpetually, by the order and injunction of this honorable court, from directly or indirectly making, constructing, using, vending, delivering, working, or putting into practice, operation, or use, or in anywise counterfeiting or imitating the said invention, or any part thereof, or any carpets made in accordance therewith, or like or similar to those which the said defendants have heretofore made; and that the said defendants may be decreed to pay the profits unlawfully obtained by them by reason of the aforesaid infringement and the damages thereby suffered by your orator, and the costs of this suit, and that your orator may have such further relief, or such other relief, as to this honorable court shall seem meet, and as shall be agreeable to equity.

And forasmuch as your orator can have no adequate relief except in this court, to the end, therefore, that the said defendants may, if they can, show why your orator should not have the relief hereby prayed, and may, upon their, and each of their corporal oaths, according to their, and each of their, best and utmost knowledge, remembrance, information, and belief, full, true, direct, and perfect answers make to the premises, and to all the several matters hereinbefore stated and charged, as fully and particularly as if severally and separately interrogated as to each and every of said matters, and may be compelled to account for and pay to your orator the profits by them acquired, and the damages suffered by your orator from the aforesaid unlawful acts.

May it please your honors to grant unto your orator the writ of injunction, as well provisional as perpetual, issuing out of and under the seal of this honorable court, commanding, enjoining, and restraining the said defendants, John Dobson and James Dobson, individually, and also in the name and style of John & James Dobson, and of "The Falls of Schuylkill Carpet Mills," and their and each of their servants, agents, attorneys, and workmen, and each and every of them, as is hereinbefore in that behalf prayed.

May it please your honors to grant unto your orator the writ of subpœna, issuing out of and under the seal of this honorable court, directed to the said defendants, John Dobson and James Dobson,

6 commanding them, by a certain day and under a certain penalty, to be and appear in this honorable court, then and there to answer the premises, and to stand to and abide such order and deecee as may be made against them.

And your orator will ever pray, &c.

BIGELOW CARPET COMPANY,
By CHARLES F. FAIRBANKS,
Treasurer.

A. v. BRIESEN,
Comp'l's Sol'r and of Counsel, No. 229 Broadway, New York.

UNITED STATES OF AMERICA, *District of Massachusetts,* } *ss:*

On this 2d day of May, 1879, before me personally appeared Charles F. Fairbanks, treasurer of the Bigelow Carpet Company, the above-named complainant, who, being by me first duly sworn, deposes and says: That he is the treasurer of the Bigelow Carpet Company, the above complainant; that he has read the foregoing bill of complaint subscribed by him for the said Bigelow Carpet Company, and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated on information and belief, and as to those matters he believes it to be true; and that the said Bigelow Carpet Company is a corporation duly organized under the laws of the State of Massachusetts; and that he verily believes Charles Magee to be the first, original, and sole inventor and producer of the design for carpets described and claimed in the letters patent referred to in said bill of complaint.

CHAS. F. FAIRBANKS.

DISTRICT OF MASSACHUSETTS, *ss:*

Subscribed and sworn to by the above Charles F. Fairbanks, this 2d day of May, 1879, before me—

[L. S.] WINSLOW WARREN,
Comm'r of U. S. Circuit Court for Dist. of Mass.

7 (Endorsed:) No. 35. April sess., 1879. United States circuit court, eastern district of Pennsylvania. The Bigelow Carpet Company *vs.* John Dobson and James Dobson. Bill in equity. Filed May 7, 1879. Arthur v. Briesen, complainant's solicitor, 229 Broadway, New York, N. Y.

8 And afterwards, to wit, on the 11th day of July, A. D. 1879, the complainants, by their solicitors, come into our said court here, and enter an order that this bill of complaint be taken *pro confesso*, which said order, being read, is as follows, to wit:

United States Circuit Court, Eastern District of Pennsylvania. In Equity.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON.

The bill of complaint herein having been duly filed on the 7th day of May, 1879, and the subpœnas being duly issued and served on the defendants, and the defendants having on the rule day of June, 1879, entered their appearance by George E. Buckley, Esq., and having failed by the 11th day of July, 1879, to file their plea, answer, or demurrer to the bill of complaint, although the time for so doing has expired: Now, therefore, on motion of A. v. Briesen, Esq., complainants' solicitor, it is ordered that the bill of complaint herein be taken *pro confesso* against said defandants, with costs, profits, and
9 damages, to be taxed by the clerk of this court according to the prayer of the bill of complaint.

A. v. BRIESEN,
Compl't's Solicitor.

(Endorsed:) No. 35. April sess., 1879. U. S. circuit court, eastern district of Pennsylvania. In equity. The Bigelow Carpet Co. *vs.* J. and J. Dobson. Order that bill be taken *pro confesso*. Filed July 11, 1879.

10 And afterwards, to wit, on the 2nd day of September, A. D. 1879, this cause coming on to be heard on the order that the bill be taken *pro confesso*, the court enter the following decree, to wit:

U. S. Circuit Court, Eastern District of Pennsylvania. In Equity. April Session, 1879.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON, Trading as John and James Dobson & Co. } No. 35.

And now, to wit, this 2d day of September, 1879, this cause came on to be heard in the presence of counsel for the complainant, and it appearing to the court that service of the subpœna issued in the cause had been duly accepted by the solicitor for the defendants, and that the appearance of their said solicitor had been duly entered on behalf of the defendants on Monday, the second day of June, 1879, and that the time for filing an answer by the defendants had long since expired and no answer had been filed, and that an order for taking the bill of complaint *pro confesso* had been duly filed after said default of the defendants, and more than thirty days before the entry of this

present decree, on motion of the counsel for complainant, it is ordered that the bill of complaint be, and the same hereby is, taken as confessed by the defendants, and the court doth thereupon further order and decree that the letters patent No. 10870, dated October 15, 1878, for a new and original design for carpets, are good and valid, and that the title to the same is duly vested in the complainant, and that the defendants have infringed the same. And it is further ordered, adjudged, and decreed that the said defendants and each of them, their servants, attorneys, agents, and workmen, be perpetually enjoined and restrained from further infringement of said letters patent. And it is further ordered, adjudged, and decreed that the complainant do recover from the defendants the gains and profits which the said defendants have made by their aforesaid acts of infringement, and also the damages which the complainant has sustained thereby, and that it be referred to Francis T. Chambers, Esq., as master, to take an account of said profits and assess said damages. And it is further ordered, adjudged, and decreed that the complainant do recover from the defendants its costs, charges, and disbursements in this cause to be taxed.

11 (Endorsed:) U. S. circuit court, E. dist. of Pa. In equity. Ap'l sess., 1879. No. 35. The Bigelow Carpet Co. *vs* Dobson. Decree *pro confesso* for injunction and account. Entered September 2, 1879.

12 UNITED STATES OF AMERICA, *Eastern District of Pennsylvania*, } *ss*:

The President of the United States to John Dobson and James Dobson, trading as John and James Dobson, and trading as "The Falls of Schuylkill Carpet Mills," Greeting:

Whereas the Bigelow Carpet Company lately exhibited its bill of complaint in the circuit court of the United States for the eastern district of Pennsylvania, in the third circuit, against you, the said defendant, praying to be relieved touching the matters therein complained of, and especially that you, John Dobson and James Dobson, trading as John and James Dobson, and trading as "The Falls of Schuylkill Carpet Mills," and all acting under you, and each of you, may be restrained from further infringing the patent and the rights of the said complainant in the premises, in the said bill mentioned, in any way or manner contrary to law or equity:

We, therefore, in consideration thereof, and also of the particular matters in the said bill set forth, do strictly command and enjoin you, the said John Dobson and James Dobson, trading as John and James Dobson, and trading as "The Falls of Schuylkill Carpet Mills," your servants, workmen, and agents, and all others acting under or with you, and each and every of you, that from hencetorth you do absolutely and entirely desist and refrain from the further constructing or using or selling, in any way or manner, directly or indirectly, or delivering, working, or putting into practice, operation, or use, or in anywise counterfeiting or imitating the invention, or

any part thereof, which is described and claimed in design patent No. 10778, dated August 13th, 1878, and described in the said bill of complaint and in the affidavit of the complainant, thereto annexed, until the hearing of the cause or the further order of the said court.

Witness the Honorable Morrison R. Waite, Chief Justice of the Supreme Court of the United States, at Philadelphia, this fifth day of November, A. D. 1879, and in the one hundred & fourth year of the Independence of the said United States.

SAMUEL BELL,
Clerk of Circuit Court.

13 UNITED STATES OF AMERICA, }
Eastern District of Pennsylvania, } *ss:*

Personally appeared Charles D. Bell, who, being duly sworn, deposes and says: That on the 6th day of November, A. D. 1879, he served the within writ on James Dobson by making known the contents to him; also, that on the 10th day of November, A. D. 1879, he served John Dobson by making known the contents of the within writ to him and leaving a true and attested copy thereof with him.

CHAS. D. BELL.

Sworn to and subscribed before me, this 11th day of November, A. D. 1879.

SAMUEL BELL,
U. S. Commissioner.

[Endorsed:] No. 34. Circuit court. April sess., 1879. The Bigelow Carpet Co. *vs.* Dobson *et al.* Injunction. A. v. Briesen, solicitor for complainant. Returned November 11, 1879.

14 And afterwards, to wit, on the 18th day of January, A. D. 1881, the master files his report, which, being read, is as follows, to wit:

In the Circuit Court of the United States, for the Eastern District of Pennsylvania. April Session, 1879, No. 35. In Equity.

THE BIGELOW CARPET COMPANY
vs.
JOHN and JAMES DOBSON, trading as John & James Dobson.

To the honorable judges of the said court:

The master appointed by the court to ascertain and state and report to the court an account of the gains and profits which the said defendants have received from infringing the exclusive rights of the said complainants in the manufacture, use, and sale of the improvements patented in the letters patent No. 10870, granted unto Charles Magee, assignor to the Bigelow Carpet Company, October 15th, 1878, for a design for carpet, as well as the damages the complainants have sustained thereby, respectively report:

That at the request of the parties he held four meetings on the

29th of October, 1st of November, 1879, respectively, at his office, 901 Walnut street, Philadelphia, when he was attended by Jos. C. Fraley, Esq., of counsel for complainant and by James Dobson and George E. Buckley, Esq., on part of the defendants.

An adjournment was then asked by the parties, with a view of effecting an amicable settlement between the parties of the matter referred to the master.

The negotiations proved ineffectual, and the proceedings before the master were renewed on May 26th, 1880, at the office of
15 A. von Briesen, No. 229 Broadway, New York city, and continued during two subsequent meetings, the evidence being by consent taken stenographically.

A large amount of testimony bearing upon the matter to be passed upon by the master was taken, the greater part of which is entitled not only in the above case, but also in the cases of The Bigelow Carpet Company and The Hartford Carpet Company, against the same defendants, which suits are of April session, 1879, and on numbers, respectively, 35 and 30, and are referred to the master in this cause for the determination of similar questions to those which are raised herein. No testimony was taken on the part of the defendants. This testimony the master is at any time ready to report to the court, if it is so ordered.

At the final argument the counsel for the complainant waived all question of gains or profit for which the defendants are accountable, and limited his claim to the damages which, it was urged, the evidence showed the complainant to have incurred by reason of the infringement by the defendants.

The testimony of John H. Worth, salesman of the complainant, shows that said complainant company sold of the patented design, which he describes as the "Chinese Lantern Pattern," over one hundred pieces during the first year (a piece containing, it is agreed by counsel, fifty yards); afterwards they sold none.

By the statement submitted by James Dobson, and marked Exhibit B, it appears that the defendants sold of this design thirty-one pieces.

Much of the testimony in the case was introduced to show that the infringements manufactured by the defendants were inferior to the complainant's carpets, and sold for a lower price (which price, however, was not lower than the defendants' usual price for goods of similar quality). The distinction in the quality of goods, it appears, is not appreciable to buyers of ordinary skill, and the witnesses assert, from their experience in the carpet trade, that the effect of such a low-priced imitation is inevitably to decrease the sales of the original. This decrease is estimated by the witness Worth as one hundred pieces in the period covered by the accounting, and this estimate is adopted and relied upon by complainant's counsel.

It does not appear what it actually cost The Bigelow Com-
16 pany to manufacture their carpet, but it is estimated by a witness, claiming to be an expert, at about one dollar and ten cents a yard; neither does it appear with certainty at what price the carpets were sold by the complainants. Read, a carpet manufact-

urer, thinks their wholesale price was one dollar and sixty-five cents per yard ($1.65), and that it retailed at from a dollar eighty-five cents ($1.85) to two dollars ($2.00).

The other witnesses say it sold, presumably, at retail, at a dollar eighty-five cents ($1.85.)

Upon this testimony, complainant's counsel founds his claim that the complainant's profits were seventy-five cents per yard (75c.) of carpet sold, and this profit applied to the estimated decrease of sales due to the infringement at $3,750.00, but claims as the measure of his damages, first adding, however, the cost of getting up another design to replace the one infringed, which was estimated at one thousand dollars ($1,000) by counsel, and at various amounts from that figure down to ten dollars ($10) by the witnesses.

It would seem impossible to fix any certain amount as the cost of any one design, as all the companies have regular salaried corps of designers, and produce great numbers of designs, good and bad, every year. Even the popular designs, it would seem, have for the most part a comparatively short and precarious sale.

To ascertain, then, the value of a design which had had a year's uninfringed sale in the market, is a question to which there is no solution, and which the master cannot attempt.

It remains, then, to consider the evidence from which complainant's counsel deduces his claim for the $3,750 which the complainant would have made had it not been for the defendants' infringement. As has been stated, this claim is founded primarily on the estimate of Worth, viz: That complainant would have sold, had it not been for the infringement during the period of the accounting, as much of the carpet as it did during the first year that the design was put on the market, or one hundred pieces.

To this evidence the master is unable to attach much weight; however positively asserted, it could, even if it stood alone, be considered only as the opinion of the witness, having its foundation in premises not disclosed in the testimony; but this same question as to the loss of sales accruing by reason of such infringement is answered by the other witnesses produced by the complainant and they say: The loss would be as much again as the sale during the competition.

17

The loss would be the number of pieces sold by the defendants.

The loss would be the difference between the first year's sales and those of the second. A witness of equal experience to any of the others expresses his incapacity to make any estimate. And in the case in which the Hartford Co. is complainant, and in which the design infringed was by far the most popular of the three as to which testimony was taken, complainant's counsel adopts as the foundation for his claim for damages an estimate fixing as the probable sale for the last twelve months of an eighteen months' period as equal to those of the first six. The master is unable to attach weight to any of these estimates, the most careful of which is applied by the witness to ascertain the loss suffered by the owner of the design, on the assumption that no other co-operating circumstance occurred together with the infringement to lessen the sales,

while he admits that there might be other causes tending to produce the same result.

The evidence as to the cost and selling price of the complainant's carpet is indirect, and the best evidence as to what the company's profit per yard was was not furnished to the master.

The complainant's witnesses, men of extended experience in the trade, state positively and as a result of such experience that the course of the defendants in infringing the complainant's design and putting their infringing carpet on the market at a lower price than that of said complainant must inevitably have damaged the company and decreased its sales; but the master is entirely unable to find from the evidence the amount of the complainant's damage or any facts which enable him even to approximate its sum.

The master, therefore, awards to the complainant the sum of six cents, as its damage for the infringement of its design patent by the defendants.

Respectfully submitted, F. T. CHAMBERS, *Master.*

18 (Endorsed:) No. 35. April sess., 1879. United States circuit court, eastern district of Penn'a. The Bigelow Carpet Company *vs.* John & James Dobson, trading as John & James Dobson. Master's report. Filed January 18, 1881.

19 *Testimony taken before Master.*

U. S. Circuit Court, Eastern District of Pennsylvania.

Before F. T. Chambers, master.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON, trading as John & James Dobson and The Schuylkill Carpet Mills. } No. 35.

WEDNESDAY, *October* 29, 1879.

Present: G. E. Buckley, counsel for defendant, and Joseph Fraley, of counsel for complainant.

Mr. Buckley agrees to produce his witness and books for inspection Saturday, Nov. 1, 1879.

Adjourned till Saturday, November 1, 1879, at one o'clock p. m.

20 SATURDAY, *November* 1, 1879.

Met pursuant to adjournment.

Present: Joseph Fraley, counsel for complainant.

Mr. Fraley requests Mr. Chambers, master, to issue summons for the defendant.

Adjourned till Monday, November 3, 1879, at three p. m.

MONDAY, *November* 3, 1879.

Met pursuant to adjournment.

Complainant's counsel offers in evidence patent granted Chas.

Magee, No. 10870, Oct. 15, 1878. The same is marked Complainant's Exhibit A.

JAMES DOBSON, being duly sworn, deposes and says: I examined "Exhibit A," and understand the design shown therein; our firm have manufactured of that design 53 pieces, 35 of which we have sold, and 18 pieces of it still unsold.

Q. 1. Was it that exact design?

A. Yes, sir; we both are manufacturers and retailers; we as manufacturers charge to ourselves as retailers all goods sent to the retail store; of this pattern we sold none except to our retail store; I charged these goods to the retail store at $1.10 per yard, and the retail store sold them at not less than $1.30, and not over $1.50 per yard; all the goods of this design was made of "body Brussels;" the average of the pieces were about 55 yards.

Q. 2. In charging up goods from your mills to your retail store, have you a regular rate for each class of goods of manufacturers' profit?

A. We charge the goods separately, and as near the cost of the manufacture of them as possible.

Q. 3. Do you mean you charge no manufacturers' profit on goods sent to your retail branch?

A. It does not show any profit so far, principally a loss, particularly since we commenced to manufacture that pattern.

Q. 4. Do you mean that all your "body Brussels" goods are charged to your retail store at exactly what it costs to manufacture them?

21 A. We charge the goods at $1.10 per yard, which approximate the cost as near as possible, and so far we have received no profits over that price; our prices to the retail store are about 10 cents lower than to jobbers, because we have guaranteed commissions or risks; these goods cost us exactly what we charge the retail store.

Q. 5. Then I understand you to say that as between your manufacturing branch and any other branch of your business the books of the manufacturing business don't show any profits in "body Brussels" goods during the time the goods like "Exhibit A" were manufactured; am I correct?

A. It showed no profit during that period.

Q. 6. What is the average net profit of your retailing business on "body Brussels" goods?

A. I could not tell. Some of these goods were sold retail and some wholesale.

(Mr. Fraley requests Mr. Dobson to make a statement from his books of the amount sold, &c.)

Adjourned till Monday, Nov. 10, 1879, 3 p. m.

22 MONDAY, *Nov. 10th*, 1879.

Met pursuant to adjournment.

Pres't: Mr. Fraley.

Examination of Mr. DOBSON continued:

Mr. Dobson produces statement from his books of the number of pieces made and sold and prices thereof, &c., and the same is marked "Exhibit B."

Mr. Dobson states: I find that I made a mistake in the statement given at the last meeting, the total being 50 pieces instead of 53 pieces, and we have on hand 19 pieces instead of 18 pieces.

Q. Does the statement include every piece of carpet, Brus-
23 sels or otherwise, which in any way resemble the design shown in patent "Exhibit A"?

A. Yes, sir.

Q. Do you personally superintend the manufactureing part of your business?

A. Yes, sir.

Q. Can you give me the name of the draughtsman or designer in your employ who designed or drew the pattern from which you had that carpet woven?

A. We did not have any design drawn, it not being necessary, having a full design of that pattern in question in the cloth from which we cut the cards, which works on the Jacquard and
24 produces the design you see here.

Q. Do you mean by the word "cloth" a piece of carpet of that design, "Exhibit A"?

A. Yes, sir.

Q. Where did you get that piece of cloth or carpet from?

A. I could not tell you; it was sent to our store to be made along with a number of samples.

Q. Do you know who sent it?

A. I do not, sir.

Q. Do you know whether it was procured directly or in-
25 directly from the Bigelow Carpet Company, complainant herein?

A. I do not.

Q. Have you that piece still?

A. I don't think we have.

Q. You stated "it was sent to our store;" do you know or can you find out who received it at your store?

A. I cannot; I presume I received it.

Q. Have you no idea who procured it and sent it to you?

A. I have not, sir.

Q. Was it some one employed by you or your firm to pick up samples and send them to you?

26 A. We have no one employed in this country to pick up samples, and I could not tell who picked it up, whether in our employ or not.

Q. Can you tell whether the sample was sent together with an order for carpet of that pattern to be filled by you?

A. Judging from this Exhibit "B," I should say not.

Q. Can you give the date when you received it?

A. I cannot give the exact date; some time in the summer or fall of 1878; it might have been in the spring.

Q. Are you constantly in receipt of such samples, or was
27 this an extraordinary occurrence?

A. We are constantly in receipt of such samples from all parts of the world, and this was not — extraordinary occurence.

Q. As a rule don't they come from persons who have some connection with or agent for your firm?

A. We have no agents for samples, only in Europe; the samples sent us in this country are sent to us from our customers; sometimes our travelling agents they pick up samples and send them to us.

Q. Can you positively swear that there is no evidence in your possession which would put you on the track of that particu-
28 lar sample so as to enable you to tell whence it came?

A. Yes, sir; I can so swear.

Q. Could you not tell in any way from the sample itself what its origin was; that is to say, whose manufacture?

A. I could not.

Q. Are you positive there was no letter accompanying that sample?

A. I never saw any letter, nor do I think any letter came.

Q. Did you not receive a letter from these complainants, or their solicitor, stating that this design was patented and warning
29 you against infringement; if so, is not that letter in your possession still?

A. I don't think we got any letter or information from any party about that pattern until we were served by you.

Q. Your firms preserve letters received, I suppose?

A. Yes, sir.

Q. Will you be kind enough to have a search made to see if you can find such letter.

A. Yes, sir.

Q. Do you know whether all the pieces you made of this pattern were woven all at the same time?

A. Yes, sir.

30 Q. You understand, and have had much practical experience in the manufacture of carpet, have you not?

A. Yes, sir.

Q. Are you able to give me any estimate, from your experience, what it would cost to make and to set up a design like that shown in Exhibit A, if you had not any piece of carpet to go from, but if the design had been originated by one of your own draughtsmen?

A. It would cost all the way from ten to thirty dollars, but not exceed the latter sum.

31 Q. Can you give me any estimate of what it would cost, after making the design, to set it up on the looms?

A. Ten dollars could cover card cutting, paper, &c., for that or any other design. I should think there would be about four hundred cards in that pattern.

Q. Do you pay your designers a fixed salary?

A. Yes, sir.

JAMES DOBSON.

Sworn to before me this 10th day of November, 1879.
FRANCIS T. CHAMBERS, *Master.*

Adjourned till Monday, Nov'r 17, 1879, at 3 p. m.

32 MAY 26, 1880, 229 BROADWAY, N. Y.,
OFFICE OF A. B. VON BRIESEN, Esq.

Present: A. B. von Briesen, Esq., and the master.

Adjourned, at written request of Mr. Buckley, until Thursday, June 3, 1880.

33 "COMPLAINANT-EXHIBIT A."—F. T. C. Bigelow Carpet Co. *v.* John & James Dobson.

UNITED STATES PATENT OFFICE.

CHARLES MAGEE, of Brooklyn, New York, Assignor to the Bigelow Carpet Company, of Clinton, Massachusetts.

Design for Carpet.

Specification forming part of design No. 10870, dated October 15, 1878; application filed September 10, 1878. (Term of patent 3½ years.)

To all whom it may concern:

Be it known that I, Charles Magee, of Brooklyn, county of Kings, and State of New York, have invented a new and original design for a carpet, of which the following is a specification:

This invention relates to a new and original design for a carpet, oil-cloth, or similar fabric; and consists of the new arrangement and ornamentation of figures in the body and in the border of the carpet, as hereinafter described.

In the photographic illustration, which represents a face view of my newly-designed carpet, the letter *a* is an irregular shield-like figure, surrounded by a border embellished by floral decoration. *b b* are two figures, of different ground-color than the shield *a*, and arranged at opposite sides diagonally of each shield. Both figures *b b* are irregular, and made of the same design. *c c* are tassel-like ornaments, arranged beneath the several figures *a*.

The carpet is embelli-hed by the representation of bouquets *d* and by other floral ornamentations.

The border of the carpet contains an inner plain stripe, *f*, an outer zigzag stripe, *g*, having inwardly-projecting semicircular ornaments *h*. Between the stripes *f* and *g* are representations of shields resembling the shield *a*, and floral decorations that extend over the stripe *f*, as shown. The tassel-like ornaments *e* are also in the border.

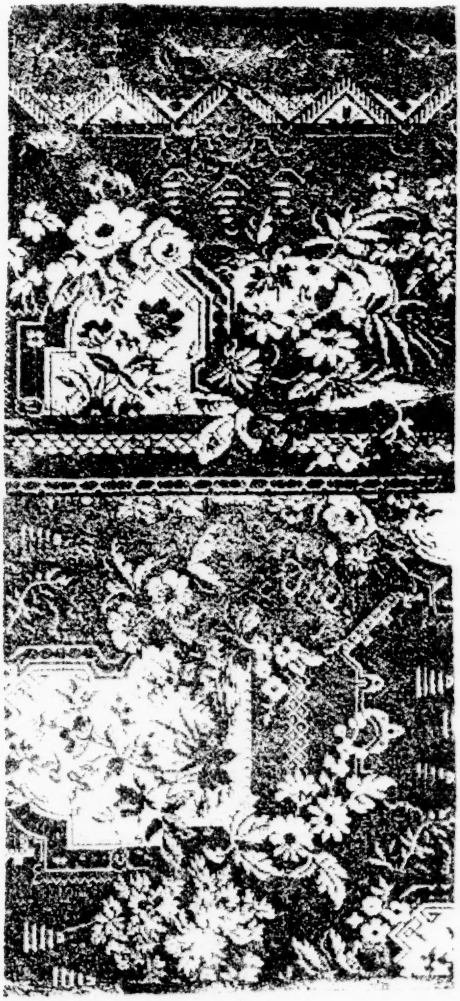
I claim—

The design for a carpet, substantially as shown.

Witnesses: CHARLES MAGEE.
JNO. H. WORTH.
T. B. MOSHER.

(Here follows photograph.)

(Neue Kölnische Holzgraph)



34 "COMPLAINANT'S EXHIBIT B."—F. T. C. Bigelow Carpet Co. *v* Dobson *et al.* Ap'l Sess., 1879. No. 35.

Sales of Brussels. 897. *Color* 1.

			Yards. Price.	
1878.				
October 17 & 18	2 p's,	C. & L. Harbach	110 @ 1.25	138 13
October 31	1 "	S. Knapp	56 @ 1.25	70 00
1879.				
February 7 & April 14	4 "	Buckley, Myers & Co	222½ @ 1.20	267 00
March 17	2 "	Oliver McClintock & Co	109½ @ 1.20	131 40
October 3	1 "	Isaac Eichberg	56 @ 1.25	70 00
April 9	1 "	Martin Kramrath	55¼ @ 1.20	66 60
" 28	2 "	S. T. Moore & Co	110½ @ 1.20	132 60
March 4	2 "	Irwin, Phillips & Co	110½ @ 1.20	132 60
April 2	1 "	Green Bro's	56 @ 1.20	67 20
" 16	1 "	Hart & Massey	60 @ 1.20	72 60
February 27, March 28	2 "	Barnes, Bancroft & Co	120 @ 1.20	144 00
March 17	1 "	Fishel Bro's & Co	66 @ 1.20	79 20
March 22, April 24	3 "	J. Cranspaw & Co	175 @ 1.20	210 00
April 2	1 "	S. W. Woolsey	56 @ 1.20	67 20
April 22	1 "	Mrs. M. Moon	43¾ @ 1.50	65 62
May 8	1 "	Tinkham & Co	70½ @ 1.20	84 60
October 20	1 "	Hart & Massey	55 @ 1.25	68 75
" 22	1 "	H. Imwold	42 @ 1.25	52 50
March 7	1 "	J. E. Somes	29 @ 1.60	46 40
April 10	1 "	J. D. Flint & Co	56 @ 1.25	70 00
July 3	1 "	K. Collins	24½ @ 1.50	36 75
	31 pieces			$2,073 15
On hand	19 pieces.			
Total	50 p's.			

Jas. Dobson, statement.

35 United States Circuit Court, Eastern District of Pennsylvania.

BIGELOW CARPET COMPANY *vs.* DOBSON. } No. 34. April Sess., 1879.

SAME *vs.* SAME. } No. 35. April Sess., 1879.

HARTFORD CARPET COMPANY *vs.* SAME. } No. 30. April Sess., 1879.

To GEO. E. BUCKLEY, Esq., *Solicitor for Defendants.*

SIR: Please take notice, that the next meeting before the master, under the reference in the above cases, will be held at the office of A. v. Briesen, Esq., No. 229 Broadway, New York city, on Wednesday, May 26, at eleven a. m., for the purpose of examining witnesses residing out of the jurisdiction of this court.

Very truly, yours,

JOS. C. FRALEY,
Solicitor for Complainant,
Per S.

STATE OF PENNSYLVANIA, *County of Philadelphia,* } *ss:*

Charles F. Stafford, having been duly sworn, deposes and says: That he served a true copy of the within notice upon George E.

Buckley, Esq., therein named, personally, by giving him the said copy at his office, in the city of Philadelphia, on Friday, May 21, 1880, between the hours of five and six in the afternoon.

C. F. STAFFORD.

Sworn and subscribed to before me, this 22d day of May, A. D. 1880.

WM. H. MYERS,
Notary Public.

36 United States Circuit Court, Eastern District of Pennsylvania.

THE BIGELOW CARPET COMPANY
vs.
J. & J. DOBSON. } In Equity.

THE SAME
vs.
THE SAME. } In Equity.

THE HARTFORD CARPET COMPANY
vs.
THE SAME. } In Equity.

NEW YORK, *June* 3, 1880.

Testimony taken by consent of counsel in the city of New York, at the office of A. v. Briesen, complainants' solicitor, for use before the master who has been appointed by this court to assess and report the damages and profits, as more fully appears by the decrees filed in said several suits.

The testimony is taken in pursuance of notice.

Appearances: A. v. Briesen, Esq., for complainants; Geo. E. Buckley, Esq., for defendants.

It is agreed that the testimony here taken be taken before a stenographer, and that when written out and signed it be handed to the
37 master, and that it constitute a part of the proofs, which are submitted to the master for his determination of the questions submitted to him.

Counsel for complainants distinctly states, that for the purpose of saving time he intends to take proof in all three of the above-mentioned cases at one and the same time, instead of taking separate proofs for each of said suits.

WILLIAM JAMES, a witness, called on behalf of complainants, being duly sworn, deposes and says, in answer to questions propounded by A. v. Briesen, Esq.:

My name is William James; my age 42; my residence 41 Commerce street, New York city; my occupation carpet salesman in connection with W. & J. Sloane, 655 Broadway; I have been in the business 30 years; I am thoroughly acquainted with the different

kinds and grades of carpet in the market, and am familiar with the prices and values of the different grades of carpets.

Q. 1. I now show you a piece of the Bigelow Company's goods marked 2092, Indian body, and ask you whether you know this pattern in the market; if so, pray tell us what you know about it as to the extent of sale and as to the favor it found in the market.

(Objected to, as immaterial unless it relates exclusively to the sales by the defendants.)

Counsel for complainant states that he is trying to prove damage done the complainant.

Counsel for defendants objects to all testimony tending to prove damage done to the complainant, and all testimony except that which relates to the profits made by the defendants.

Complainants' counsel: On what ground does counsel for defendants make that objection; does the decree in each of the foregoing suits require the master to report the damage suffered by the complainants?

Defendants' counsel: On the ground that the decisions in the various circuit courts, upheld by the Supreme Court of the United States, have been that the complainants' damage in such cases as these shall be the amounts of profits made by the defendants through their infringement.

38 A. I know the quantity of goods sold of this pattern has been immense; since these carpets were made it decreased by the inferior quality of the goods.

Q. 2. I now show you Exhibit No. 2, which has been decided a counterfeit of the 2092 pattern, and ask you how the sales of such imitation have affected the sales of the genuine Bigelow goods just referred to?

A. The style so nearly imitating it depresses the sales one-half of the original production, which it would have sold had not the copy been made.

(Defendants' counsel objects to this line of testimony, as going to prove indirect damage.)

Q. 3. Have you seen the Dobson counterfeit of the 2092 pattern?

A. Yes, sir.

Q. 4. How did they compare in quality with the genuine?

A. Very much inferior.

Q. 5. Inferior to what?

A. To the quality of the 2092.

Q. 6. Of the genuine Bigelow Company's carpets?

A. Yes, sir.

(Question and answer objected to by defendants' counsel, as before.)

Q. 7. At what figure are the genuine Bigelow goods sold in the market, if you know?

(Same objection as before.)

A. $1.85 per yard.

Q. 8. And at what rate were the Dobson counterfeit goods sold, if you know?

(Same objection as before.)

A. $1.65, and as low as $1.50.

(Counsel for complainants, in order to relieve counsel for defendants of his chronic objectionable condition, is willing to have
39 it on record that every question which he will put to any one of the witnesses in this matter shall be regarded as objected to, on the reasons already stated, or any other reason that counsel for defendants may at any time suggest.)

Q. 9. Do you know anything about this design of carpet? (Showing witness a carpet copied from design of patent No. 10870, upon which the second one of these suits is based.)

A. The sale of that is similar to 792 D, not quite so extensive.

Q. 10. Who brought out that design, if you know?

A. It was brought out by the Bigelow Carpet Company.

Q. 11. And it ranged in price the same as the other, $1.85?

A. $1.85.

Q. 12. Did you notice any counterfeits of that in the market?

A. Yes, sir.

Q. 13. By Dobson & Dobson?

A. Yes, sir.

Q. 14. How did the introduction of these counterfeits affect the sale of the genuine?

A. Similar to other patterns.

Q. 15. You mean to reduce the sale?

A. Yes, sir.

Q. 16. Now, as a practical salesman, Mr. James, I ask you this question: If a costly carpet of a particular design is put upon the market, and afterwards the design is completely counterfeited by another house in inferior goods, what is the effect upon the ordinary consumption of the introduction of such counterfeits?

A. The copy is very injurious to the sale of the pattern at the low price, and the consumer is injured by the quality of the goods he buys.

Q. 17. Well, the genuine manufacturer—how is he injured?

A. Well, he is injured the same way as the dealers are from the stoppage of sales.

Q. 18. Do ordinary purchasers know the difference in the grade of carpets?

A. Very few; not the general buyer.

Q. 19. As a rule, they look at the design?

A. Not the quality.

Q. 20. If it is Brussels body, they take it to be all alike?

A. Yes, sir.

40 Q. 21. Can you give an estimate as to the proportion of sale which the Bigelow Company has lost in these two carpets, about which you have already testified, by the infringement by Dobson?

A. I should think, certainly, from three to four hundred pieces of each kind in a year.

Q. 22. What would have been the prospect of the continued sale for years to come of these designs, if it had not been for the infringement?

A. It would have stayed in the market as long as such patterns could be sold.

Q. 23. Now, Mr. James, I would like to show you a piece of the Hartford Company's goods (showing witness a piece of the Hartford Company's goods made in accordance with the letters patent under which their suits above mentioned is brought) and ask you whether you have seen this carpet known in the market as 11619.

(Complainants' counsel states that this carpet referred to is a carpet made under patent 11074, under which said suit of the Hartford Company is brought.)

A. Yes, sir.

Q. 24. How are carpets of this kind sold in the market, if you know?

A. At $1.75.

Q. 25. I now show you an imitation of said design made by defendants herein, and ask you how it compares with the genuine in quality?

A. Well, the fabric is very much inferior; the pattern drawn, very similar.

Q. 26. Precisely the same, is it not?

A. The purchaser would not know the difference except they were pretty well posted.

Q. 27. Experts as to the grade?

A. Yes, sir.

Q. 28. They could not tell the difference from the design?

A. No, sir; the goods are inferior.

Q. 29. How would you rate the Dobson imitation?

A. About $1.50.

Q. 30. Do you know whether the sale of the genuine Hart-
41 ford goods of the kind now referred to has been injured by the imitation?

A. Yes, sir.

Q. 31. Can you estimate the extent, about?

A. At least one-half what they would have been if the copy had not been made.

Q. 32. State whether or not the Bigelow Company would have sold all the carpets which Dobson & Dobson sold in imitation of the designs about which you have testified, and whether or not the Hartford Company would have sold all the pieces sold by Dobson & Dobson that they have made in imitation of the Hartford Company's carpets about which you have testified, had it not been for the infringement.

A. These patterns would have for future years sold in immense quantities every season; such patterns would never leave the market if imitations were not made.

Q. 33. I ask you whether the Bigelow Company would have sold to the persons who bought the infringing goods the genuine goods if the purchasers had not found the infringing goods in the market.

A. Certainly, sir.

Q. 34. And likewise the Hartford Company would have sold theirs had it not been for the infringing company?

A. Yes, sir.

Q. 35. How do you account for that; parties ask for the picture, and they buy wherever they can find it?

A. Yes, sir.

Q. 36. And buy where they can get it at the lowest price?

A. Yes, sir.

Q. 37. And, therefore, if there is no imitation in the market, the genuine would have sold?

A. Always.

Cross-examination *de bene esse:*

Q. 38. How long have you been a salesman in the carpet business?

A. I have been in the carpet business for thirty years; I have been at R. N. Tinson & Co., and Stewart's and Sloane's.

Q. 39. How do you know that upon every occasion that Dobson sold a piece of the infringing goods that the Bigelow Com-
42 pany or the Hartford Company would have sold a piece of that particular pattern if Dobson had not sold it?

A. We know by the buyers who have seen the carpet at the lower rates seeing the inferior goods would be apt to be taken by the price.

Q. 40. Do not customers frequently come into carpet stores with the intention of purchasing carpets for their rooms or dwellings, and desire to be shown various patterns which are on exhibition there, and then pick out that pattern which pleases them most?

Counsel for complainant submits that the question is to an extent misleading, unless the gentleman will distinguish between a retail customer who buys for his own use and a tradesman who buys to sell.

Q. 41. I refer to a retail customer.

A. They would be usually shown patterns to the taste of the customer; they suit themselves as to the design, what style and pattern they want, or to match certain decorations.

Q. 42. When retail customers come into your store you frequently have to show them half a dozen different designs?

A. Sometimes three or four hundred designs before they are completely suited.

Q. 43. By Mr. BRIESEN: Was that the experience also when you showed the 2092 D Indian body?

A. Yes, sir; when showing goods to customers we showed three or four hundred until they got suited.

Q. 44. When jobbers come to your store or to your sales-room to purchase carpets by the piece, to be by them again sold, do they

not come and ask to see your various patterns, and pick out that which pleases them most?

A. Yes, sir.

Q. 45. Then, why are you able to say that upon every occasion where the Dobsons sold either a piece or a number of yards of this infringing carpet, that the Bigelow Company would have sold a duplicate of that pattern if Dobson had not made such sale?

(Objected to, as already answered.)

A. The sales would be as much again if the copy had not been made, and all such copies are against the original.

43 Q. 46. Do you not consider it likely, in view of the fact that both retail customers and jobbers come into a store and ask to have the various designs shown them, and then select those that please them most, that in more instances than you can estimate such jobber or customer would have selected some other attractive design had they not seen the infringing design in the defendants' stores?

(Objected to, as argumentative.)

A. These confined patterns are not seen everywhere, and evidently the buyer would buy the pattern at the original place; these patterns are confined to the Bigelow Company; we consider these the leading patterns in the market.

Q. 47. From your experience as a salesman, do you not consider that in more instances than you can tell or estimate, if these infringing designs had not been in the defendants' stores, retail customers and jobbers coming into their stores to purchase would have taken some other attractive design where they have taken this?

(Objected to by complainants' counsel, as assuming that which is not a fact:

1st. Because the fact is, the consumers did take the infringing design.

2d. Because the witness cannot know what design they would have taken if the infringing design had not been shown.)

A. Or, in other words, where parties are shown different patterns, this is their choice, their taste; being patterns that are considered choice, they take those, and the salesman's influence is sometimes regarded a good deal in such patterns; being choice designs, they are pressed sometimes.

(Question repeated.)

A. There are other designs which they could have purchased; of course it is not everybody's taste; some like one particular color, some like another; very often a salesman shows those which are selling and are the most attractive patterns.

44 Q. 48. Can you swear positively that for every ten pieces of infringing design sold by the defendant, the Bigelow Company would have sold ten pieces of their patented corresponding design if the defendants had not so sold said ten pieces of the infringing design?

A. They would have sold them if the copy had not been made.

Q. 49. How do you know they would?

A. By the Bigelow Carpet Company owning the right of the patent, which prevents other stores having the same design.

Q. 50. Then you are able to swear, are you, that every retail customer and jobber who purchased of the defendants came to the defendants' store for those particular infringing designs and for no others, are you?

(Objected to, as immaterial and as assuming what the witness has not stated.)

A. Yes, sir.

Q. 51. You are able to swear that?

A. Yes, sir.

Q. 52. Are you acquainted with every retail customer who came into the defendants' store?

A. No, sir; I would have to have a long memory.

Q. 53. Have you met every retail purchaser and jobber who purchased the infringing design of the defendants?

A. No, sir.

Q. 54. Have you been in communication with them?

A. No, sir.

Q. 55. How are you able to say that they came to the defendants' store to purchase the infringing design and no other?

A. By what views we have taken from the customers themselves; we have never taken the names of the parties; they looked at the original and then bought the copy; they stated they had seen a copy of the original pattern at Dobson's.

Q. 56. Am I correct in understanding you to say that every customer, whether retail or jobber, who purchased infringing designs of Dobson first came to your store and saw the original, and then went and purchased of Dobson a carpet?

A. No, sir; not having taken the names of the parties who had seen the carpet; they stated they could purchase the same thing at lower prices.

45 Q. 57. Have you seen all these retail customers and jobbers who bought at Dobson's the infringing pattern?

A. I have not seen them myself, but I have heard them spoken of; I don't wait on everybody, but I wait on a great number.

Q. 58. Then your testimony is from hearsay, what you have been told?

A. Yes, sir; I have heard it spoken of, and also I have spoken to customers myself.

Q. 59. Please name the individual or individuals who told you that customers first went to your store and saw the original and then went to Dobson's?

A. I never made the inquiry of those names.

Q. 60. But you say you were told that that was the case; I ask you to tell who told you so?

A. The trade.

Q. 61. Name one gentlemen in the trade who told you so, that every customer did that?

A. Not every customer; I said I did not know the individuals who came there to the store to look at the carpets, who bought these patterns; I state now I do not know the names of the parties who had seen the carpet.

Q. 62. You say not every customer?

A. Not every customer.

Q. 63. How many customers?

A. I could not tell you; I have never taken any minute of it.

Q. 64. You don't know how many?

A. No, sir.

Q. 65. How much inferior is the defendants' carpet to the Bigelow and Hartford Company's carpet?

A. Very much inferior; I should think its value from 25 to 30 per cent. inferior.

Q. 66. Do you state this upon hearsay?

A. No; from personal knowledge, and from the number of years I have been in the business, very much inferior.

Q. 67. When did you come to that conclusion?

A. Long before the defendants sold goods in New York.

Q. 68. Then that estimate is based upon your general knowledge of the carpets which they sold?

46 A. General knowledge, knowing the quality and the sale of them by defendants.

Q. 69. How long did this interference of the defendants with your sales occur with respect to the pagoda pattern No. 2092?

(Objected to, as the witness has not testified that the infringement interfered with his sale, and as he is not connected with either one of the complainants; question withdrawn.)

Q. 70. How long did the sales by defendants of the infringing pagoda pattern interfere with the sales by the Bigelow Company of that same pattern, their number being 2092?

(Objected to, as not cross-examination.)

A. I could not state the time.

Q. 71. You don't know?

A. No, sir.

Q. 72. How long did their sales of the infringing design patent 10870 interfere with the sales by the Bigelow Co. of the same design?

A. I could not state the time.

Q. 73. Do you know how much of it the defendant sold?

A. No, sir.

Q. 74. What do you mean by answering in your direct examination that you know the Bigelow Company lost sales of from three to four hundred pieces a year?

A. By having the copy on the market, it depreciated the sale of the original.

Q. 75. You just infer that that would be the case?

A. I know it is so; I do not infer anything about it, by my personal showing, myself.

Q. 76. Please state the means by which you arrive at that positive conclusion; you admit that you do not know how much the defendants have sold.

A. I have no record of their books, not knowing their amount of sales; but I know the depreciation of the original pattern is the amount I have stated; had not the copy been made the original would have been continuously sold and still selling; the sales would have gone on as they usually did.

47 Q. 77. How do you know they would?

A. From personal showing; my own knowledge of what I have shown of the pattern myself.

Q. 78. Don't you know that the sales of designs vary with different seasons?

A. Such patterns are sold in all seasons.

Q. 79. Don't you know that the taste for a certain design, and the sales in the market, vary; sometimes sales will almost entirely cease?

A. Not of such designs as these; they are unceasing; marketable at all times—any season of the year.

Q. 80. Do the Bigelow and Hartford Companies have certain customers who take a specified number of pieces of these patented designs at regular intervals?

(Objected to, as calling for hearsay.)

A. They would have if the copies had not been made; of course it leaves the pattern open for the dealer to buy where it suits him the best.

Q. 81. Have you examined the books of the Bigelow and Hartford Companies?

A. No, sir.

Q. 82. Do you know how many pieces of these various patented designs, upon which suit has been brought, they have sold?

A. I know the depreciation of the sales.

Q. 83. I ask if you know the number of pieces they have sold?

A. No, sir.

Q. 84. Do you know the number of pieces they are now selling?

A. No, sir.

Q. 85. How do you know the Bigelow Company or the Hartford Company have lost sales at all on this thing?

A. By not having call for the pattern, of course it has ceased selling on account of the copy being made by the other house; it depreciates their sale and stops the making of them.

48 Redirect examination:

Q. 86. In what respect, Mr. James, are the defendants' goods inferior to the complainant's; in character of the material employed, or what?

A. In the character of the material that is used in them.

Q. 87. In what respect is one Brussels carpet superior to another Brussels carpet in the time it would wear?

A. It's the service, the number of years it would last.

Q. 88. What is your experience as to the ordinary wear of the genuine patented carpets about which you have testified; I mean how long do they usually last when exposed to ordinary use?

A. In ordinary use a Bigelow would wear ten years, where the other would not last four.

Q. 89. The Dobson would last about four and the genuine would last about ten years?

A. Yes; that has been tested by actual wear of hotels and steamboats; that is the proper wear that a carpet would get of that kind.

Q. 90. These patterns about which you have testified were regarded as leading patterns in the market?

A. Yes, sir.

Q. 91. That is why you say their sale would not deteriorate unless it was for the production of copies?

A. Yes, sir.

Q. 92. Now, of course, the fact of the copy has not, or has it, the principal injurious influence, as the mere fact of there being a copy for sale at a lower price?

(Objected to as leading.)

A. No, sir.

Q. 93. Have you yourself personal knowledge of people declining to buy these genuine goods of your house because of the existence of the infringing pattern at a lesser price?

A. They always declined the price of the original, as they could get the copy so much cheaper.

Q. 94. Have you any interest in any of these controversies, direct or indirect?

A. No, sir; none, whatever.

49 Recross-examination:

Q. 95. You say these designs are all leading designs?

A. Yes, and very popular.

Q. 96. Are there more of them sold than of other designs?

A. There are other designs that take well, but these are picked out by the customers' own taste; it is not the taste of the salesman, or anybody else but the consumer.

Q. 97. How many leading designs are there in the market?

A. That would be a hard matter for me to tell.

Q. 98. Are there fifty?

A. Oh, yes; I could not name the number of them.

Q. 99. I suppose there are more than three or four hundred leading designs in the market?

A. I could not state the number at all.

Q. 100. It would be impossible to estimate the number of leading designs, would it?

A. Yes, sir.

Q. 101. But these are among them, are they not?

A. These are among the collection.

Q. 102. Have you not heard complaints from customers from time to time, that various of these Bigelow and Hartford carpets, not those involved in these suits, are more expensive than Brussels carpets sold elsewhere?

(Objected to as not relating to any issue in these causes.)

A. Do you mean as to price?

Q. 103. Yes.

A. The price of the Bigelow and Hartford are always high standards.

Q. 104. Then you have heard such remarks by customers, have you not?

A. No, sir; nothing more than speaking of their value, quality, and goodness of fabric, as being the best.

Q. 105. But you have heard customers say that they can purchase body Brussels carpet cheaper at the defendants' than they could at your store with respect to all designs?

A. Yes, sir; applied to all grades of goods that they keep.

Q. 106. Where did you ever see one of the Dobson body Brussels carpets in use for four years?

50 A. I stated the relative wear of the carpets; it was my opinion of the wear of the different grades.

Q. 107. As merely your opinion?

A. Yes, sir.

Q. 108. You don't know of any actual facts having borne that out?

A. I could not name that; that is my opinion as to the wear of the two carpets.

Q. 109. You are engaged in selling Bigelow and Hartford Company carpets, are you not?

A. I sell all kinds, all grades of goods; not those especially.

Q. 110. You don't sell the defendants' carpets, do you?

A. No, sir.

Q. 111. There is a general prejudice among carpet jobbers here against the defendants, is there not, on account of their selling low-priced goods?

A. Selling inferior goods.

Q. 112. Well, there is that prejudice?

A. Yes; and there always will be as long as they make such grades.

By Mr. BRIESEN:

Q. 113. What is the reputation of the defendants as regards honesty in dealing with competitors; I mean as to their getting up their own designs or not?

A. The feeling is that copies are extensively made from original designs.

Q. 114. Is that regarded as an honest practice?

A. No, sir; a very dishonest one.

Q. 115. Is it or not their general practice to copy other people's designs?

A. Yes, sir.

By Mr. BUCKLEY:

Q. 116. How many cases do you know of where they have copied other peoples' designs?

A. I could not mention them; these two particular cases I know something about; if any others were shown to me I should be able to testify the same as I do in this case.

51 Q. 117. Can you point out any single instance where they did it before?

A. I could any other patterns if I saw them.

WILLIAM JAMES.

Sworn to before me, this 3d day of June, 1880.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

DAVID M. READ, called by the complainants, being duly sworn, deposes and says, in answer to questions propounded by complainants' counsel: My name is David M. Read; I am 47 years of age; I reside in Bridgeport, Conn., and am in the dry goods and carpet manufacturing business.

Q. 1. Have you been present while Mr. James, the last preceding witness, gave his testimony?

A. A part of the time.

Q. 2. Does what you heard of his testimony agree with your knowledge and opinions?

(Objected to, as general.)

A. I am not conversant with all that he said; as far as I know it is correct.

Q. 3. You have seen the pagoda pattern, 2092, of the Bigelow Company in the market, have you not?

A. Yes, sir.

Q. 4. You have seen the Dobson imitation thereof?

A. I have.

Q. 5. How does it compare in quality of material with the genuine?

A. I am not a manufacturer of Brussels carpets, and perhaps not competent to give the exact difference; it is inferior.

Q. 6. But it is inferior?

A. Yes; in my judgment.

Q. 7. Have you seen the genuine Bigelow pattern known as 2134 in the market?

A. Yes, sir; I have.

52 Q. 8. Also the copies thereof made by the Dobsons, like the pieces now shown you?

A. No, sir.

Q. 9. Please look at the Dobsons' piece, which I now show you,

which is made in imitation of the genuine, and state how the two compare in grade and quality.

A. The Dobson is very much inferior; lighter in weight.

Q. 10. Have you seen the genuine Hartford carpet, about which Mr. James has testified, and the imitation thereof by Dobson?

(Pieces of carpet shown witness.)

A. Yes, sir; I have seen both.

Q. 11. How do they compare in quality?

A. The Dobson is inferior in quality, in my judgment.

Q. 12. As a practical dealer in carpets, what is the effect upon the sales of genuine goods when copies thereof or counterfeits are introduced at a lesser price?

A. It is to injure the sale of the original design.

Q. 13. How do you account for that?

A. In the first place, the trade will, to a very large extent, go after the inferior article, because they can buy it cheaper, and the manufacturer of the original and better goods suffers thereby very largely, because he has had great expense if he has got out a leading design for the market, a taking pattern, and another manufacturer puts upon the market an inferior copy of the same design, it hurts the sale of his goods with the better class, on account of its being an inferior goods, and with another class it takes the place, because they can buy it cheaper, thereby, in most all cases within my knowledge, it destroys pretty much the sale of the first original design.

Q. 14. The designs which you have been shown and which are involved in these three suits here, are they or not leading designs?

A. They are; at least two of them that I know, No. 2092, and this of the Hartford; the other I cannot speak of, I do not know; in my judgment, two of the best things that have been put upon market in years.

Q. 15. Even if the defendants had sold but very few of the infringing goods, did or did not, in your opinion, the complainants lose a much larger proportion of trade?

53 A. I don't quite understand that question.

Q. 16. Suppose the Dobsons had simply made ten pieces of the infringing goods, but offered them to the trade at a lower price than the genuine; would the injury done the complainants merely have been the existence of those ten pieces, or would they lose a larger proportion of sale on such leading goods as these than ten pieces?

A. It would be very much more damage, in my judgment, than just the sale of the ten pieces.

Q. 17. The damage would be proportionate to the reduction of actual sale as compared with previous sales, would it not?

(Objected to, as leading and as calling for the witness' inferences instead of a statement of fact.)

A. The infringement and copying of a new and popular pattern would, in my judgment, damage the sale very largely.

Q. 18. And in proportion, for the first season, to the falling off of the sale?

A. It would affect it very largely, although the sale of the inferior goods might not be large.

Q. 19. Have you any idea as to the price at which these genuine goods are offered in the market?

A. Yes, sir.

Q. 20. What is the price per yard?

A. $1.65, I believe, at wholesale, and they have been retailed at $1.85 in the city here, I think, and in some places as high as $2.

Q. 21. Have you any idea as to the price at which Dobson offers these infringed goods in the market?

A. Their price, I think, is $1.50.

Q. 22. Wholesale?

A. Wholesale.

Q. 23. And how much retail?

A. I don't know what their retail price is at present.

Q. 24. Would, in your belief or opinion, the complainants have sold of the genuine goods as much as the defendants sold of the infringing goods had the defendants not been in the market with such goods?

A. It would be my opinion that they would have done.

Q. 25. Have you had experience with counterfeiters of your
54 own designs; if so, please state the effect of such counterfeiting upon the sales of genuine goods?

A. I have put an original pattern upon the market, where it proved to be a good pattern, and had it copied by another party, and sold for a lower price, and the way I discovered it was the falling off in the sale of my own goods, and looked it up and found that was the case; another party had made it, and had almost stopped the sale of the original design, which was my own.

Q. 26. What do you know to be about the expense of putting a new popular design upon the market, including the pay of draughtsmen, change of loom, cutting of cards, and introducing generally the new design?

A. The cost of a design like this one is not confined to the cost of the labor upon that one design; for instance, the Bigelow Company may keep a corps of designers employed for six months, and in that entire six months they may not produce over two designs of the reputation of that one, and in the meantime the expenses are going on and are really chargeable, perhaps the whole six months' labor, to a very few good permanent designs; that is my experience.

Q. 27. Are you at all able to estimate as to the average cost, then, of getting up a popular design?

A. No, sir.

Cross-examined by Mr. BUCKLEY:

Q. 28. You say six months' labor of a designer would result in the production of only two such popular designs as these; he would in the meantime be getting up a number of less important designs,

which would be used by the company employing him, would he not?

A. Yes, sir; I say a corps of designers might labor for six months; it is on the principle of mining—they may be delving in hills, but they don't strike a nugget only once in a while; therefore the whole labor is chargeable to that one nugget; those are the chances we take in designing.

Q. 29. The corps of designers, however, would be turning out designs continuously, would they not?

A. Yes; but it is on the principle of throwing out the ore that won't hardly pay for the working until you strike a good vein, but they are not worth—I presume any of our leading manufacturers would testify, the defendants or any other—that the great bulk of designs turned out would be of not so very much value; it is the choice one that they strike once in a while.

Q. 30. It depends a great deal upon the ability of the designers employed, does it not, more or less?

A. Of course they have got to have designers of ability to get anything that is good.

Q. 31. The Hartford Company are continually putting new designs upon the market, are they not, as well as the Bigelow?

A. Yes; I suppose they are.

Q. 32. You speak of charging the falling off of sales of the original designs during the first season to the sale of inferior infringing designs; would you also attribute the difference between the first sales and those of the second season to the same cause; why might that not be due to other causes?

A. Well, it might be due to other causes.

Q. 33. Might not the falling off in the sales of the first season be due to other causes, combined with this?

A. Hardly probable.

Q. 34. Well, it is possible, then?

A. Hardly.

Q. 35. Did you ever know of a good design running only part of a season?

A. No, sir; not unless it was infringed upon.

Q. 36. Well, in one season the sales vary, do they not, in different parts of the season, the amount of the sales?

A. In one year?

Q. 37. You call a season a year?

A. No; the spring and fall is the season for carpets; the heat of the season is about three months each, perhaps.

Q. 38. Well, the sales of one month vary from those of another in one season?

A. Not to any great extent.

Q. 39. Did you ever buy any of these infringing goods of Dobsons?

A. No, sir.

Q. 40. How do you come to know the price at which they sell these infringing goods?

A. From my knowledge of the market, as a dealer and
56 manufacturer; I have bought their goods this season, but not these.

Q. 41. What enables you to form an opinion as to the sales of infringing goods by Dobsons, exactly supplementing the sales of the original patented goods by the complainant?

A. From the fact that these patterns were very prominent and selling very largely by these parties, to my knowledge, at the time that defendants copied them. Then I know from hearsay that the sale was very much decreased, and I judge that the Bigelow and Hartford Company would have sold their goods, having the start they did in the market—as many goods and more than Dobson and they sold together; that is my opinion from my knowledge of the market. I am in the market every week, and in at all of these places.

Q. 42. Still that is merely an opinion of yours, and you cannot swear positively that it would have been so?

A. No, sir.

DAVID M. READ.

Sworn to before me, this 3d day of June, 1880.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

JOHN H. WORTH, called on behalf of complainants, being duly sworn, deposes and says, in answer to questions propounded by Mr. BRIESEN:

My name is John H. Worth; I am 53 years of age; reside in Westfield, N. J., and my occupation is salesman of the Bigelow Carpet Company.

Q. 1. How long have you been with that company?

A. Going on eleven years.

Q. 2. You have personal knowledge of the sale by the complainants, the Bigelow Company, of the pagoda pattern known as No. 2092?

A. I have.

Q. 3. And of the Chinese lantern pattern known as No. 2134?

A. Yes, sir.

57 Q. 4. Did you notice the income of the infringing goods of said two designs when brought out by the defendants?

A. Yes; very soon afterwards.

Q. 5. Can you state to the court and to the master what effect the introduction of the infringing goods had upon the sale of the genuine goods?

A. It curtailed the sale of these patterns very much.

Q. 6. Can you tell us, with any degree of exactness, how it curtailed the sale of the pagoda pattern?

A. I can give you about the number of pieces we sold the first year and what we have been selling for the last six months. We sold 586 pieces the first year, and this last six months 132.

Q. 7. Then the falling off has been at the rate of 400 pieces?

A. About one-quarter.

Q. 8. That would be a loss of over 300 pieces per annum, would it not?

A. Yes, sir.

Q. 9. What has been the effect on the Chinese lantern pattern of infringement?

A. The first year we sold 100 pieces of that, and since that we have not been able to sell any; it stood still entirely.

Q. 10. Have you any on hand?

A. Yes; we have had it shown all this time, and we could not sell a piece.

Q. 11. Why?

A. The fact that they said they could buy it in inferior goods.

Q. 12. At a lower price?

A. Yes, sir.

Q. 13. Have you any direct knowledge to show that you were, and also failed to sell the pagoda pattern because of such infringement?

A. No, sir; I have not. I could not swear to that directly. Yes, I could, too, because we have not had the orders from the parties that controlled the pattern for it, and they have not been able to sell. Consequently we have not produced it.

Q. 14. And now I understand you that your loss by the infringement was about 300 pieces of pagoda and about 100 pieces of Chinese lantern?

58 A. I should say so. We have not been able to sell any of the Chinese lantern this year. We have had it on show all the season.

Q. 15. Had it not been for this infringement, would you have been able to sell it?

A. As far as my knowledge and belief, we should have continued to sell that.

Q. 16. Would you have been able to sell as many pieces as the defendants did of these infringing goods, had they not been in the market?

A. I think we should have been able to sell more.

Q. 17. Certainly as many as they?

A. Yes; and more.

Q. 18. Are the defendants' goods equal to the genuine in grade?

A. They are not so considered.

Q. 19. How do you consider them?

A. They are neither as good material or as well manufactured as the genuine; it is so considered by all the trade.

Q. 20. How do you rate the difference in percentage?

A. I should think somewheres about 25 to 30 per cent.

Q. 21. The infringing goods are from 25 to 30 per cent. inferior in grade to the genuine?

A. Yes, sir.

Q. 22. Do you believe, then, as to the cost of manufacture the same difference, from 25 to 30 per cent., exists?

A. I should think nearly that; some may not be quite as much.

Q. 23. Can you give us an idea as to what it did cost to get up for the trade the pagoda design, including all the expenses of draughtsmen or artists, changing the loom and introducing the goods to the trade?

A. No; I don't know as I could exactly; I suppose from three to four hundred dollars; I think that would be a small estimate, if anything.

Q. 24. Likewise with the Chinese lantern pattern?

A. Yes; just about.

Q. 25. The loss of trade occasioned by this infringement required you to get up other patterns, so as to keep up the average of your sales, did it not?

A. Yes, sir.

59 Q. 26. How do you estimate the expense or damage put upon your business by that branch of the injury done you?

A. It is pretty hard work for me to form an estimate of that; I could not give an estimate of that because I am not clear.

Q. 27. About how many designs did you have to produce in order to make up for the loss occasioned?

A. We produce a great many designs that we get nothing from of course these come in with the others; these that we do succeed on cost so much more, because we have this corps of designers and have to keep them at work; we make a great many designs that are just samples and are not used at all.

Q. 28. Can you give us an idea of about how many different designs because of these infringements taking your trade?

A. No; I could not state that, as we are constantly making out new designs all the while.

Q. 29. Do you think that an inspection of the books would assist you in finding out these facts?

A. It might some; I might by inspecting our books.

Q. 30. I would like you to ascertain if you can.

A. Yes.

Q. 31. The average number of pieces of each design that you start on, that is, actually put into the market—that is, for instance, supposing of one design you make 500 pieces, of another you only make 2 pieces, of another you make 10 pieces, the amount of those three lots would be 512, and dividing that by three would give the average cost—then you could arrive at what I am asking you.

A. Yes; I understand you.

Q. 32. So that we would see by the average how many designs you needed to replace these 400 pieces that you lost.

A. Yes.

Q. 33. And, as you said that the getting up of each design costs three or four hundred dollars, we would then get at the definite figure?

A. Some designs cost more than others; a large design like this costs more than a small design.

Adjourned for lunch.

60 After recess the examination of Mr. WORTH was continued as follows:

Q. 34. What, if anything, did you ascertain in regard to the matter last inquired for?

A. I ascertained that we had spent in the neighborhood of $1,000 on designs to supercede or take the place of the pagoda design.

Q. 35. Did you succeed?

A. No, sir; we have not succeeded.

Q. 36. Then you did not make up the loss occasioned you by the infringement, even at the expense of $1,000?

A. No, sir; this patent is a novel idea itself—the first thing of the kind brought out.

Q. 37. Did you ever have a pattern that took the market as well as the pagoda pattern in body Brussels?

A. I don't know but what we have in other styles, but not in this peculiar style.

Q. 38. It was one of the most successful patterns that has been brought out?

A. Yes, sir.

Q. 39. How did you seek to overcome the loss occasioned by the loss of the Chines lantern pattern?

A. There was no use; it just stopped the sale of it.

Q. 40. You stated, I think, that you had some of it left?

A. Yes; we have a few pieces left.

Q. 41. Did you try to sell them?

A. Yes, sir.

Q. 42. Did you succeed?

A. No, sir.

Q. 43. Could not sell them?

A. Could not sell them at all.

Q. 44. Why not?

A. I don't know; because they depreciated by being made in cheaper goods at less price. I don't know what else.

Q. 45. Do you know whether or are you informed whether compromise was offered to the defendants, by which the payment to you of a certain sum of money was agreed upon by both parties, and the only condition insisted upon was that you should control the sale of the infringing goods at a price to be determined upon between you and the defendants?

A. I think there was something of that kind.

61 Q. 46. And the defendants refused to accept, because they did not want you to control the sales?

(Objected to, as leading the witness by argumentative discourse.)

Q. 47. What was the cause of the failure of the proposed compromise?

A. Because they would not let us control the goods they had in their hands of that pattern.

Cross-examined by Mr. BUCKLEY:

Q. 48. What was your offer of compromise?

A. They made a proposition of some kind. I have forgotten the details of it, but as I understand that was the point, the difference was—the way we could not agree—just on that one point.

Q. 49. You don't remember what the offer of compromise was at all, then?

A. No, sir; I don't remember the details of it all, the amounts, &c., only I know that was the reason we could not come to an understanding.

Q. 50. Was not part of the objection that you asked too much?

A. No, I think not; as I recollect about it, that was the only point.

Counsel for complainant states as a matter of fact, and that he is willing to testify as a witness on that point, that the sum of money on which the compromise was agreed was offered to him by Mr. Dobson and considered accepted at the time, and that the only cause of the failure of the compromise was that Mr. Dobson was unwilling to allow the complainants to sell infringing good- at any price named by those defendants.

Counsel for defendants is willing to be sworn and testify in his own behalf; also that there were several compromises, and that the only objection of the defendants, so far as regards the actual sale of the infringing goods, was that they should not be put up at public auction and sacrificed, but be sold at private sale, and also that the demand of the complainants by way of remuneration was too great.

62 Counsel for defendants objects to any statement by either counsel, or offer to testify, as not being proper testimony in this behalf, to bring up an issue on that question, viz., as to who should control the sale of the goods.

Q. 51. Did you ever hear any proposition made by the defendants in this case?

A. No, sir.

Q. 51½. Did you ever see a written communication from them making a proposition?

A. No; I don't think I ever did.

Q. 52. Then what you have stated as to their desire to control the sale of the goods is merely from hearsay, is it not?

A. Yes; it is statements made by Mr. Kendall to me.

(This testimony regarding compromise is objected to by counsel for defendant, as being based upon hearsay.)

Q. 53. In what period of time did you spend $1,000 in getting up new designs to supplant or take the place of those which had been infringed?

A. I think it was about a year on that particular point.

Q. 54. How much more did you spend in getting up other designs during that same period?

(Objected to, as not at issue.)

A. I could not state that.

Q. 55. Did you spend any more?
A. We have a corps of designers at work all the time.

(Counsel for complainant now offers in evidence a letter written him by the defendant, and dated April 3, 1880, and the same is marked "Exhibit Def't's Letter of Compromise," and asks counsel for defendants to admit the genuineness of that letter.)

(Defendants' counsel admits the genuineness of the letter, but objects to its being placed in evidence, unless it is coupled with full testimony as to all the facts and negotiations out of which it arose.)

63 EXHIBIT DEFENDANTS' LETTER OF COMPROMISE. JUNE 3, 1880.

PHILAD'A, *April* 13, '80.

A. V. BRIESEN, 229 *Broadway, New York.*

DEAR SIR: We have your favor and note remarks. We have paid the contempt costs to-day. Neither bill or demand in any shape had been made on us until we got the notice from Mr. Fraley asking for attachment for same. Now, as to the settlement of these cases (3): We will give you the $900 as mentioned, and you take a decree in all the cases.

About the sale of the goods to the Bigelow Co. at $1.00 p. yd., we positively refuse to do it. This is so different from what we talked about, that, if coupled with the settlement, it cannot be complied with.

As stated, we will consent to have any legal restraint put on their sale, and will, if we should sell them, give a list of the parties to whom sold; and as their sale can in no way affect the Bigelow Co. in any way, we feel this is nothing but vindictiveness, which is unnecessary.

About the Hartford pattern, you have our report before the master. We have none of them on hand, or had when the injunction was taken. We also have none of the pagoda pattern on hand; we have not ascertained how many pieces we have made, but not many, if any, more that the Hartford pattern—about twenty pieces, but am not positive. We have gone as far as we can in these cases, so far as the settlements is concerned.

Yours, truly, JOHN & JAS. DOBSON.

Q. 56. Did you employ any new designers after you found your sale dropping off on the infringed patterns over and above the number which you had previously employed?
A. No, sir; we did not.
Q. 57. Did you pay these designers a regular salary?
A. Yes, sir; we keep them busy all the year round.
Q. 58. This $1,000 which you speak of was spent by way of salary?
64 A. Yes, sir.
Q. 59. To the designers?

A. To the designers.

Q. 60. You would have spent that $1,000 whether these infringements had occurred or not, would you not?

A. We might have spent it, but it would not have been in that particular field.

Q. 61. By saying the money was spent in this particular direction, you mean paid in the way of salary to these designers and getting up new designs?

A. Means in getting up new designs to succeed and take the place of this particular style.

Q. 62. Then you mean that you issued instructions to your designers to get up a design in this particular style?

A. Yes; of that style.

Q. 63. Of that general character?

A. Yes.

Q. 64. What is the business of these designers; what are their duties; to get up new designs?

A. Yes, sir.

Q. 65. How long do these designers work a day?

A. Commence at 9 and leave off at 5.

Q. 66. They are expected to be at their duty from 9 to 5 every day, are they not?

A. Except on Saturdays, they leave at two o'clock.

Q. 67. Did these designers get up any new designs of this general style?

A. They get up all styles; they have to have a variety of styles; they are not confined to this style; that is what I understand; we spent a thousand dollars in trying to get up something similar to this to take the place of it; we have been unable to do that—to get up anything to take the public as that did; that was the first one; you might say it was a bonanza—just happened to take and please the public, and we have not accomplished the thing since.

Q. 68. It even pleased your counsel, I notice.

A. I am only stating the facts.

Q. 69. You say that the carpets of the defendants are 25 to 30 per cent. inferior to those of the complainants, or near that?

A. Somewheres in that neighborhood.

65 Q. 70. You mean the value of the material placed in them is so much inferior?

A. The material and manufacture, both.

Q. 71. When did you last have a design which ran approximately as well as the pagoda design?

A. We have got others of other styles that run, I suppose, equally as good; they are not this peculiar style; they are altogether different.

Q. 72. About how many have run as well as this?

A. Perhaps we may have four or five or half dozen; perhaps more; I don't think more; then we have a great many of lesser lights.

Q. 73. When did you first place this pagoda style upon the market, about?

A. I think it was in the spring of 1879—1879 or 1878; I have forgotten; in the fall of 1878.

Q. 74. Did you get up any other design that was placed in the market about that time?

A. Not of that character.

Q. 75. Which ran approximately as well as this?

(Objected to, as utterly immaterial.)

A. I don't recollect now whether we did or not; we are bringing out designs constantly, and once in awhile we get a bonanza, and then again we don't.

Q. 76. Do you not call to mind one design which you placed upon the market about that period, which ran about as well as this, which was not infringed?

A. No, I do not; we got up another in the same colors, but different style altogether; but that was infringed, but not by these parties, I think, but by other parties, I think; I guess Mr. Briesen has a suit on.

Q. 77. About how long did these that you have mentioned as running about as well as this sustain their large sale?

A. Well, we can't always tell that; sometimes they will run three years, and sometimes longer, sometimes not so long; we can't tell; we have got some carpets that we have made for ten years; they are not what we call large sales, like this, but we always sell them.

66 Q. 78. I suppose you occasionally have a design that sells very largely, and only runs for a season in large sales?

(Objected to.)

A. There is no popular design but what lasts more than a year.

Q. 79. I suppose some of them run only about 18 months or two years?

A. Some we don't even make after bringing them out; we have to throw all our labor and expense away; a great number we cannot tell, and those that are popular they bear the expense of the others; therefore when we do get a pattern that is popular it makes it cost us a little more than if all our patterns are popular.

Q. 80. That, I suppose, is the experience of all carpet manufacturers?

A. Yes; not only carpets, but all things that have to be made in that way.

JNO. H. WORTH.

Sworn to before me, this 3d day of June, 1880.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

67 WILLIAM FOWLER, called on behalf of complainants, being duly sworn, deposes and says, in answer to questions put to him by complainants' counsel:

My name is William Fowler; I am 30 years of age; reside at

Orange, N. J.; occupation, salesman for the Hartford Carpet Company.

Q. 1. Do you recognize the carpet on which this suit is brought, manufactured by the Hartford Carpet Company?

A. Yes, sir.

Q. 2. Do you know since when they have been in market?

A. The spring of 1879.

Q. 3. Can you state how the sales before the infringement commenced corresponded with the sales after the infringement?

A. We sold in the first six months about 800 pieces.

Q. 4. Of that design, 11074?

A. Yes, sir; we sold in the first six months a little over 800 pieces, and in the last twelve months about 375; I mean, up till the first day of July, 1879, we sold over 800 pieces; from the first day of July, 1879, to the first day of June, 1880, we sold 380 pieces actual sales.

Q. 5. According to the half year's sale, the annual sale would have been 1,600 pieces?

A. Yes, sir.

Q. 6. And by the infringement it dwindled down to 380 pieces?

A. Yes, sir.

Q. 7. According to that, your loss by the infringement would be 1,280 pieces per annum, would it not?

A. Yes, sir.

Q. 8. What do you consider to be the loss to the Hartford Carpet Company in one year in sales of said patented carpet by reason of said infringement?

A. Well, of course, the only way you can get at that is to take other patterns which have not been infringed, and you find they sell very much the second season as they did the first.

Q. 9. And in view of that, what do you consider to be the loss in this case, in the number of pieces?

68 A. If the carpet had not been infringed, undoubtedly we should have sold a very large quantity more of the goods.

Q. 10. How much larger do you think you would have sold, in view of the first six months' sale?

A. Well, I should think it was perfectly fair to say we—of course of this you can only judge from other patterns.

Q. 11. Taking that as a basis, what would be your computation for this?

A. We ought to sell in the second year certainly as much as we sold in the first six months, undoubtedly, I think.

Q. 12. Now, the first six months you sold 800 pieces?

A. Yes; a little over.

Q. 13. And in the second year you sold 380 pieces?

A. Yes, sir.

Q. 14. Now, please state what you think would be the loss, in number of pieces, by reason of the infringement.

A. About 400 pieces; that, of course, is based on the result of experience in selling other patterns. Of course you cannot tell exactly how any individual pattern will sell.

Q. 15. That is your most reasonable and sound estimate, is it not?

A. Certainly; that is the only way you can base it.

Q. 16. Now, state whether, in your opinion, if the defendant had not infringed this design, you would have sold, beyond any doubt, at least as many pieces as they sold, of the infringing design.

A. Undoubtedly.

Q. 17. What steps did the Hartford Company take, besides serving the defendant, to make up the loss occasioned to their trade by said infringement?

A. Well, of course, if we had sold the legitimate quantity of this particular pattern, we would not have had to try other patterns to take its place; it would have saved us the expense of experimenting, cutting cards, and trying samples of some other pattern to take its place.

(Question repeated.)

A. We had to get up other patterns.

Q. 18. What was the expense of that, the getting up of other patterns, which expense was occasioned by said infringement?

69 A. Well, I don't know exactly as I could answer that question excepting in this way: That this pattern in question ran, when it was at its best, a third of our looms.

Q. 19. How many looms were there?

A. Over twenty—between twenty and thirty—running at one time on this particular pattern. Well, since that time the number has decreased, dwindled down till we only run about one loom on it.

Q. 20. Was that owing to the infringement, as you believe?

A. I have no doubt if the carpet had not been infringed we should have made more of it.

Q. 21. What did you do to keep those twenty looms going?

A. We were to a very large expense in getting up designs, and our designing expense would be, probably, not far short of $20,000; that is, for designing and experimenting on samples, and cutting cards, and getting the patterns correct in samples.

Q. 22. All of which expense was caused by this infringement?

A. A portion of that; it would cost us $20,000 a year for our business, and if we ran a third of our looms on one pattern six months, why, that would make the actual cost of one pattern in the neighborhood of $3,000; that is a fair way to put it.

Q. 23. Then one of the items of loss caused to you is an additional expense of about $3,000 for keeping the twenty odd looms busy, which would have been kept busy without an additional expense had it not been for such infringement; is that it?

A. That is the idea, exactly.

Q. 24. Do you feel able to state to what extent, if any, the defendants' goods made in infringement of your patent are inferior to the general goods of your corporation?

A. They are inferior in every respect, in quality of material, and also in the way they are made.

Q. 25. How would you express it as a matter of percentage; that difference?

A. From 20 to 25 per cent., I should think.

Q. 26. When applied to the cost of manufacturing, would there be that difference?

A. I don't know as I could answer that; I don't know the cost of manufacturing, exactly, of either of them.

70 Q. 27. Well, if these goods are about 20 or 25 per cent. inferior to yours in material and workmanship, is it not, in your opinion, reasonable to assume that it costs from 20 to 25 per cent. more to produce your pattern than it does to produce the defendants' pattern; apart from the cost of the original design, that would be reasonable?

A. I don't know the cost.

Q. 28. Without knowing the cost?

A. It seems reasonable enough; yes.

Q. 29. If you see a piece of manufacture of any kind made in imitation of another piece which exceeds the first in value by 20 per cent., would it not be reasonable to assume that one cost 20 per cent. more to produce than the other?

A. Yes.

Q. 30. Have you any idea as to what it did cost your corporation to get the patented design here in controversy, from the inception to its completion, ready for the market?

A. I should think from $250 to $300.

Q. 31. How do you make that estimate?

A. Well, that is about the average cost of a design.

Q. 32. Of any one design?

A. Of any design that we sell, from $250 to $300.

Q. 33. Mr. Dobson testifies that he thinks it cost you about $20, including the pay of the designer, the cutting of the cards, the rigging of the loom, and all the details necessary to complete an original design; what do you think of that kind of testimony?

A. When you come to put down the designer's salary you can very soon figure up for yourself what it costs; it is simply a matter of figures.

Q. 34. What do you find it to be?

A. It is not far from $250 to $300.

Q. 35. You have made several estimates on that point?

A. Yes, sir.

Q. 36. And you have found that to be the actual cost in each case?

A. That is what we figure as the actual cost of a design that is put upon the market.

Q. 37. Did you lose trade, besides losing the sale of these particular goods, by virtue of the infringement?

71 A. The experience is that if you get up a very first-class pattern and it is copied in inferior goods, and a customer comes into your store and you show him the design, he says, "Yes, that is very pretty, but I can buy it in cheap goods;" the result is he does not buy it in the original goods.

Q. 38. Do you not also lose the sale of other goods besides, if a customer comes in, for instance, and sees this design, and finds it is more expensive than one he can buy of Dobson; do you not also lose besides this particular design?

A. I don't know.

Q. 39. An indirect loss of the trade?

A. Well, I could not estimate that.

Q. 40. Is it not the fact; I do not ask you to estimate it; does not the person who loses the sale of one line of goods therefore indirectly lose the sale of other goods?

A. I do not know, Mr. Briesen, whether I could estimate that.

Cross-examined by Mr. BUCKLEY:

Cross Q. 41. You say it cost you about $20,000 a year to get up designs for your works, experiments, and so on; did it cost you any more in the past year than it did in years previous?

A. Yes; we spent more last year than we did the year before.

Cross Q. 42. How much more?

A. I could not give you the exact figures; I haven't it in my mind.

Cross Q. 43. That is, within the last year; I mean down to June 1st?

A. Yes, sir.

Cross Q. 44. Did you spend any more in the year ending July 1, 1879, than you did in the year ending July 1, 1878?

(Objected to, as immaterial and not at issue.)

A. I have not got the figures; I could not tell you.

Cross Q. 45. Do you employ a regular corps of designers?

A. Yes, sir.

Cross Q. 46. Do they have a regular salary?

A. Yes, sir.

72 Cross Q. 47. How many have you?

A. I cannot tell you just the number.

Cross Q. 48. About?

A. All told, men and youths, about a dozen.

Cross Q. 49. Well, the youths simply do the cutting out of the cards, don't they; the designing department is not included in the card department?

A. It is all done at the factory.

Cross Q. 50. Do you know whether you employed any more designers this last year than you did previously—the year ending June 1, 1880, than you did in 1879?

A. Yes, sir.

Cross Q. 51. How many more?

A. I could not tell you without referring to the record.

Cross Q. 52. Are you not a little uncertain whether you employed more?

A. No, sir; I know we employed more.

Cross Q. 53. Your general business increased during the year ending June 1, 1880, over what it was in the year ending July 1, 1879?

A. Well, our general business has increased, because we are making more goods, different grades; it does not come into this matter at all, though.

Cross Q. 54. You have designers for all grades of goods though, haven't you?

A. Yes, sir.

Cross Q. 55. The more goods you make, the more designs you get up?

A. Yes, sir; the more different grades of goods, of course, we have to have more designers; those who make designs for this fabric do not design for any other fabric.

Cross Q. 56. You say there is twenty per cent. difference in the material between carpets manufactured by your company and those manufactured by the defendant?

A. I say, in my judgment, the goods manufactured by Dobson are worth twenty per cent. less than our goods.

Cross Q. 57. On account of the materials?

A. And manufacture and finish and everything.

Cross Q. 58. That is true of all other goods, is it not?

(Objected as incompetent, unless the goods are produced.)

73 A. These goods that are here, it is.

Cross Q. 59. Are you not acquainted with their general manufacture; the goods they generally sell?

(Objected to, as not an issue.)

A. No, sir; not generally.

Cross Q. 60. You know that to be the case, that the general report of their goods is that they are inferior in both material and make, to those of your company?

(Objected to, as not an issue.)

A. That is the reputation they have, yes, sir; poorer goods.

Cross Q. 61. They make a cheaper grade of goods?

A. They make a poorer quality of goods.

Cross Q. 62. How many designs do you turn out in a year?

A. Whether they are made or not?

Cross Q. 63. Yes.

A. About 300.

Cross Q. 64. Do you know how much you pay for salaries to your designers?

A. No, sir; not without figuring it up; about $20,000 is about the mark for all these designs.

Cross Q. 65. What enables you to fix that sum as the amount?

A. That is based on the amount of salary paid designers, and an estimate of the cost of experiments.

Cross Q. 66. You say you don't know the amount of salaries paid your designers?

A. I don't know without figuring it up.

By Mr. BRIESEN:

Cross Q. 67. State whether you did figure it up from your books.

A. Yes; I have figured up from actual knowledge of what we paid

different men. That question that you asked about 300 designs, I don't mean that we manufactured that number.

Cross Q. 68. The designers turn them out and you select from those what you make?

A. Yes, sir.

74 Cross Q. 69. As near as you can come to it, about what portion of the designs turned out do you manufacture?

A. About one in three; perhaps one in four.

Cross Q. 70. How do you know that you sold 800 pieces of these goods the first year?

A. From the books.

Cross Q. 71. You made up that statement from your books?

A. Yes, sir.

Cross Q. 72. Do you know who you sold them to?

A. Various parties throughout the country; I could give you the names if I had the books here.

Cross Q. 73. The figures here which you give as the number you sold are not from your recollection, from the estimate taken from your books?

A. My recollection is based upon the estimate taken from the books; we could not get any estimate any other way.

By Mr. BRIESEN:

Cross Q. 74. You brought a memoranda along showing precisely how many pieces you had sold, did you not?

A. I did.

Cross Q. 75. Did you take that memorandum from your books?

A. I did.

Cross Q. 76. Have you any objection to showing that memorandum to counsel for defendant?

(Witness shows memoranda to counsel.)

Cross Q. 77. That is for this peculiar pattern?

A. That is for No. 1161, which is the carpet here in controversy.

Cross Q. 78. 1161 is your trade number, isn't it?

A. Yes.

Mr. BUCKLEY: Since the testimony of this witness is taken from their books, I call for the books of original entry, which contain the entries of these sales of 800 and 380 pieces, respectively, and for the production of those books before the master.

75 Cross Q. 79. Will you produce them?

(Counsel for complainant states that he will not produce them unless the master orders their production.)

Cross Q. 80. Did you make the entries in these books from which you took these figures?

A. Yes, sir; most of them, if not all.

Cross Q. 81. You did not make all of them.

A. I cannot say positively whether I did or not; I made the bulk of them.

Defendants' counsel objects to the testimony of this witness, touching the number of pieces sold by them, because—

1st. The testimony is based upon certain book entries, which books the witness and counsel for complainant refuses to produce.

2d. Because the entries upon which he bases his testimony he is not sure were all made by him.

Cross Q. 82. Will you produce these books before the master?

Complainants' counsel requests the witness not to answer the question.

A. The books, of course, are in use all the time, and it would be very awkward to bring them away, but I am prepared to swear to the accuracy of the statement I have made.

By Mr. BRIESEN:

Cross Q. 83. State, if you please, to me whether you personally took the figures from the books?

A. Yes, sir.

Cross Q. 84. And you solemnly swear that those figures harmonize with the books?

A. They may vary within 35 pieces.

Cross Q. 85. How do they vary from the books?

A. When I give you 380 and 800, I do not mean to say
76 our books will show exactly 800 pieces; we have actually made more than I have said; they will show 816 pieces, or thereabouts.

By Mr. BUCKLEY:

Cross Q. 86. You cannot state from your own knowledge the number of pieces sold by you in the last one or two years of other patterns—special patterns which were not infringed—can you?

(Objected to, as not in issue.)

A. No, sir.

Cross Q. 87. Are these other estimates of yours, regarding the cost of the manufacture, based upon entries in your books also?

A. I have not given any estimate as to cost of manufacture.

Cross Q. 88. Is this estimate of $20,000, which you have made as the cost of getting up designs, putting into looms, experimenting, &c., based upon entries made in your books?

A. No, sir.

Cross Q. 89. From your own recollection?

A. From my knowledge of the cost.

Cross Q. 90. Can you remember now the details by which you arrive at those figures?

A. No, sir.

Cross Q. 91. How did you arrive at those figures?

A. I have answered that before.

Cross Q. 92. Answer it again.

A. By taking the cost of the designing department and the cost of experimenting——

Cross Q. 93. From what?

A. Actual costs.

Cross Q. 94. Where did you get the costs from?

A. From the amount of money paid.

Cross Q. 95. How much money did you pay?

A. I cannot tell you the different items, because I cannot recollect them; I could give you the total.

Cross Q. 96. By Mr. BRIESEN: How much is the total?

A. $20,000.

77 Cross Q. 97. Are not those items down in the books of the company?

A. I don't know, sir.

Cross Q. 98. Then you don't know whether you make entries in your books of the amount of salary paid to your designers?

(Objected to, as the witness is only a salesman, and, therefore, as calling for hearsay.)

A. I do not know what entries are made.

Cross Q. 99. You are a salesman, are you?

A. Yes, sir.

Cross Q. 100. How do you know this money was paid to the designers, that is, that the items were paid which in the aggregate amount to about $20,000?

A. I know that is the cost to our company.

Cross Q. 101. How do you know; did you pay the money yourself?

A. I know what is paid to the designing department.

Cross Q. 102. I asked you that question, and you said you did not know.

A. I said I could not give you the figures without figuring it up; I cannot give you the items.

Cross Q. 103. From whom did you get those items if you did not pay the money yourself?

A. I got them from my knowledge; I know what the items are.

Cross Q. 104. Do you mean it came to you by intuition?

A. No, sir.

Cross Q. 105. Did you get them from the check-book?

A. I know what we pay our designing department, because I have a good deal to do with that department.

Cross Q. 106. How do you know; you do not pay the money, you are not the book-keeper?

A. I know what we pay the designers.

Cross Q. 107. How did you obtain this knowledge?

A. Because I have charge of the department.

Cross Q. 108. Are you located at the store or factory?

A. Store.

Cross Q. 109. Where are these designers?

A. At the store, sir; all of them.

Cross Q. 110. Are these experiments made at the store?

78 A. No, sir.

Cross-Q. 111. Your looms are at the mill?

A. Yes, sir.

Cross-Q. 112. In Hartford?

A. Thompsonville, Ct.

Cross-Q. 113. Then you know the salaries paid to designers from what they tell you, do you?

A. No, sir; I know what arrangements are made; what salaries are agreed to be paid to them.

Cross-Q. 114. Did you engage them?

A. Some of them.

Cross-Q. 115. Did you disburse this money for these experiments at the factory?

A. No, sir.

Cross-Q. 116. How did you arrive at the figures which make up the $20,000?

A. It is an estimate.

Cross-Q. 117. Upon what do you base that estimate?

A. On the loss of time, material, waste, &c.

Cross-Q. 118. How do you know what the cost of material and cost of waste, &c., is, when the factory is situated at Thompsonville, and you are a salesman in the store in New York?

A. Because I am thoroughly acquainted practically with the business.

Cross-Q. 118½. How do you know the amount of material and waste used in experimenting?

A. Because I know exactly from practical experience what it is.

Cross-Q. 119. Then this estimate of yours is founded upon a general idea, but not upon any actual figures?

A. Founded upon a general—yes.

Cross-Q. 120. A general idea?

A. Well, it is a general idea; at the same time it is a fact.

Cross-Q. 121. You have no actual figures to work upon?

A. I have upon the designers' department.

Cross-Q. 122. I am speaking of these experiments.

A. In the designing department I have the figures to go on; on the experiments it is an estimate.

Cross-Q. 123. An estimate based upon your general knowledge of the business?

79 A. Yes, sir.

Cross-Q. 124. You do not go up there and see the amount of waste which occurs?

A. I go up there sometimes; yes, sir.

(Defendants' counsel objects to this witness' testimony as to the cost of getting out these designs, and the testimony as to the cost, generally, in experimenting and putting into looms, as being founded upon vague and general estimates, and upon no accurate knowledge.)

Redirect by Mr. BRIESEN:

Q. 125. What proportion of the $20,000 do you reckon for experiments?

A. About one-third.

Q. 126. The balance is paid to draughtsmen?

A. Yes, sir.

Q. 127. Apart from your books, are you able to state, as a matter of fact, that you sold over 300 pieces of this carpet during the period ending June, 1879?

A. Yes, sir.

Q. 128. And that you have sold little over 300 pieces since?

A. Yes, sir.

(Objected to by defendants' counsel, as the witness has already stated that he based that estimate upon figures in the books, and then refuses to produce those books.)

Q. 129. So that if you had not taken them from the books, you would have stated here to the same effect, would you not?

(Objected to, as hypothetical and leading.)

A. Yes, sir; to the same effect.

Q. 130. Did you take those figures from your books at my request?

A. Yes, sir; to be more accurate.

Q. 131. You state that the expense of making designs and experimenting is about $20,000 per annum, and that about 300 new designs were made, and that of these about one-third is made
80 into carpets, which would make about one hundred designs made into carpets, the cost of which would be about $200 for each carpet actually made. How do you arrive at the additional amount of from $250 to $300, which you say you found to be the actual expense of getting a carpet ready for the market?

A. I have taken into that estimate simply the estimate of the designers' salaries and cost of experimental samples; I have taken no estimate of the cost of material, for designing, and all that kind of thing.

Q. 132. How about cutting cards?

A. Cutting cards is really included in the experimenting, but then there is the loss; for instance, we sell samples at half price; there is the loss of half the cost of every sample that is made.

Q. 133. That adds to the expense of the average?

A. Yes.

Q. 134. Do you make as poor goods in body Brussels as the defendant?

A. No, sir.

Q. 135. What is defendant's reputation as to honest dealing in the market?

A. He copies every design he can get.

Q. 136. Do you mean with permission of the originators?

A. No, sir; he has the reputation of paying nothing for designs, but stealing them from manufacturers.

(Counsel for defendant objects to such questioning as immaterial, and states that he is willing to be sworn that the defendants employed a corps of designers themselves to get out original designs for them, and that the answer of the witness as to defendant's stealing every design he can get is vague, immaterial, and not based upon facts, to defendant's counsel's own knowledge.)

Q. 137. Before this suit was commenced by the Hartford Carpet Company, were the defendants politely invited to discontinue the infringement, as far as you are aware.

A. Yes; I believe there was a letter written to that effect.

Q. 138. Did they discontinue it in view of that invitation?

A. No, sir; they even sold the carpet after the injunction was served.

81 Q. 139. Sold the infringement of this carpet?

A. Yes, sir.

Q. 140. How do you know that?

A. I had a party go there and purchase it at their store.

Q. 141. Of Dobson?

A. Yes, sir.

Q. 142. Have you got that piece?

A. Yes; I can produce part of it, and can produce the bill of it, too.

Q. 143. I will ask you, Mr. Fowler, to produce a piece of that carpet, and the bill, and the person purchasing it, if possible, at the next meeting of this examination, unless you can do so now after a recess of 20 minutes?

A. I can produce the bill, and the man who purchased it.

Q. 144. How about the piece?

A. I could not get it in 20 minutes; I could get it to-morrow, possibly; I can get it; it is in New York.

The further examination of this witness is adjourned to Wednesday, June 9, 1880, at 11 o'clock a. m.

He is requested for that session to produce exact abstracts from the books showing the numbers of carpets of patented designs actually entered in said books and sold, and also, if possible, to find the bill or the receipt of Dobson, and the piece of carpet which they sold after the injunction was served, so as to be able, together with the person who made the purchase, to prove contempt of court.

The witness, Mr. Worth, being still present, counsel for defendant calls upon him to go upon the stand in order that he may ask him two or three more questions on cross-examination, touching the source of his knowledge as to the number of pieces of the various infringed designs sold by the Bigelow Company in the last few years.

Counsel for complainant says:

1st. That Mr. Worth is not correctly styled a witness—now, he being off the stand and regarded as a private gentleman.

2d. That an adjournment having been entered on the record it is absurd afterwards to call the witness to appear.

82 3d. That the desire to ask Mr. Worth further questions about his knowledge of the number of pieces sold is an after thought, and should have occurred to the learned counsel while the witness was in his clutches. Counsel for complainant certainly declines to produce a witness to accommodate the defense, knowing that the defendants have the right, in reply to the complainant's proofs, to subpœna and examine any witness which they may desire to examine, including Mr. Worth.

Adjourned to Wednesday, June 9, '80, at 11 o'clock a m.

83 United States Circuit Court, Eastern District of Pennsylvania.

THE BIGELOW CARPET COMPANY
vs.
J. & J. DOBSON. } In Equity.

THE SAME
vs.
THE SAME. } In Equity.

THE HARTFORD CARPET COMPANY
vs.
THE SAME. } In Equity.

NEW YORK, *June 9th*, 1880.

Met pursuant to adjournment. Counsel present as before.

Mr. Fowler not being present to continue his examination, another witness is called.

FRANCIS T. HOLDER, called on behalf of complainants, being duly sworn, testified as follows, in answer to questions propounded to him by A. v. Briesen, Esq.:

My name is Francis T. Holder; I am forty-seven years of age; reside in Yonkers, Westchester county, N. Y., and am by occupation a manufacturer of carpets, employed by Alexander Smith & Sons, carpet manufacturers, of Yonkers.

84 Q. 1. How long have you been in the carpet business?

A. Twenty-two years, connected with the manufacturing of carpets.

Q. 2. Are you conversant with the expense of manufacturing carpets, and capable of estimating the cost of manufacturing them, as your business partly consists of that?

A. I think so; it wholly consists of that.

The privilege of the counsel for defendant as to objections applies to all testimony taken in this cause.

Q. 3. I now show you some body Brussels of the Bigelow Carpet Company, being the pieces of carpet about which the preceding witnesses have testified, and ask you to state what, in your estimation, is the cost of carpets of that quality—I am speaking of the present time?

A. I should say $1.30, the cost of production.

Q. 4. That is the cost of what?

A. The cost of the carpets ready for selling, of course; not what he should realize, but what he should reckon they cost him.

Q. 5. You take into your estimate the price of wool?

A. The price of wool, labor, all the expenses of manufacturing and selling, interest, and everything—insurance.

Q. 6. How would you estimate the cost of the manufacture of the Hartford Company's goods, of which I now show you a piece?

(Complainants' counsel shows witness a sample of the Hartford Company's carpet, regarding which testimony has already been taken in this matter.)

A. In answering that I have got to make a sort of general answer; the goods vary to some extent.

Q. 7. I am speaking of this kind.

A. I should say there would be about five cents difference in the cost; $1.25 per yard.

Q. 8. Have you any interest in this controversy?

A. No, sir; none at all.

Q. 9. How does the price or cost of making such carpets as the one about which you have testified compare to-day with the price of the same goods about one year ago?

85 A. About twenty per cent. more to-day; hardly that—fifteen to twenty.

Q. 10. About one year ago, therefore, the expense of making the Bigelow carpet of the kind shown you would have been about $1.10 a yard?

A. From $1.06 to $1.10, I should say.

Q. 11. And the Hartford Company's goods from $1.00 to $1.08?

A. Yes, sir; the same proportion.

Cross-examined by Mr. BUCKLEY:

Cross-Q. 12. In estimating the cost of the Bigelow Carpet Company's goods, such as have been shown you, at the present time, you are estimating upon the price of wool and of labor as it is to-day in the market, are you not?

A. Yes, sir.

Cross-Q. 13. Are you aware of whether the goods shown you are made from wool bought to-day, or bought one year ago?

(Objected to, as immaterial.)

A. No, sir.

Cross-Q. 14. What was the price of wool as compared with the price to-day?

A. I could not tell you.

Cross-Q. 15. Was it lower or higher?

A. It is higher now than a year ago, but I don't buy it; I have only the manufacturing to do; I take the yarns and make the carpets.

Cross-Q. 16. Then, strictly speaking, you are not aware of what these carpets did cost the Bigelow Company?

A. No; I know what they ought to cost them; I know what the price of yarns were at this time; I know what they should cost.

Cross-Q. 17. Is not the same true of the Hartford Company's goods which you have just answered, in relation to the Bigelow Company's goods?

A. Yes, sir.

Cross-Q. 18. You are not aware of what they paid for their wool, or whether they have manufactured from wool in stock,
86 how long they may have had that wool, or whether these carpets have been manufactured from wool bought at the present time, at present prices?

A. I don't know that, sir; my estimate of the value of the goods is based upon the value of yarns at the present time and a year ago.

Cross-Q. 19. You are not aware of how long these goods have been made, are you?

A. No, sir.

Cross-Q. 20. Whether for the Bigelow or for the Hartford Company?

A. No, sir.

Cross-Q. 21. You are aware that the prices of labor, at the present time, is higher than it was one year ago?

A. Yes, sir.

Cross-Q. 22. In carpet mills?

A. Yes, sir.

Redirect by Mr. BRIESEN:

Q. 23. Do you produce carpets at the factory at which you are employed of substantially the same character as those which you have testified about?

A. No, sir; not exactly the same.

Q. 24. What is the price of wool to-day, do you know?

A. I don't know what is the price of wool.

Q. 25. What is the price of worsted?

A. The price of such worsted as is used in these carpets is from sixty to seventy-five cents per pound.

Q. 26. How many pounds do you calculate to a yard of these carpets?

A. One pound and a quarter per yard.

Q. 27. For Brussels carpet of this quality?

A. Yes, sir; I am speaking of what the price of wool is in the market, not what it costs the manufacturer.

Q. 28. How much do you calculate for the threads which are not worsted in said carpet—the linen threads or whatever they are?

A. There is one-third of a pound of cotton and one-third of a pound of linen; that is about what it is.

Q. 29. To a yard?

A. Yes, sir.

87 Q. 30. How do you estimate the price of the cotton?

A. It is worth at the present time about 22 cents a pound

Q. 31. And the linen?

A. About the same.

Q. 32. How much do you estimate for the labor?
A. About fifteen cents.
Q. 33. Per yard?
A. Yes, sir.
Q. 34. How much for the dyes?
A. The dyes would be about four cents a yard.
Q. 35. How much for sundries—other items not already mentioned?
A. Six cents per yard.

Recross by Mr. BUCKLEY:

Cross-Q. 36. Did you fix this at .92 per pound for wool?
A. .92 per pound for wool.
Cross-Q. 37. At what price are you reckoning the wool?
A. I don't know; I know the price of wool in the market; I don't have anything to do with the buying; I know simply what the worsted is in the market.
Cross-Q. 38. In speaking of the price of wool in the market that refers as well to worsted as to wool, generally speaking, would it not?
A. I think, perhaps, it would be better for me to define my position; I have nothing to do with the yarn, except—I have to answer by the price of worsted, not from the price of wool.
Cross-Q. 39. Do you know the price of worsted in the market today?
A. Yes.
Cross-Q. 40. What is it?
A. From 60 to 75 cents per yard.
Cross-Q. 41. Do you know what it was one year ago?
A. From 45 to 50.
Cross-Q. 42. Did they use worsted or wool proper in manufacturing these goods?
A. Worsted in these goods.
Cross-Q. 43. You don't know whether they had that in stock or whether they manufactured it from some they had recently bought?
A. I do not.
88 Cross-Q. 44. Or how long they have had the carpets done?
A. I do not.

By Mr. BRIESEN:

Q. 45. Is the quality of the worsted in the Bigelow and Hartford goods inferior, as you find it here in the samples before you?
A. No, sir.
Q. 46. Is it the best?
A. It is as good as they ever put into that class of goods; the sample is a very good piece of goods.

The witness here signs the stenographer's notes, and the further signing of his testimony is waived by consent of counsel.

I, Willy G. E. Schultz, do hereby certify that the above witness, Francis T. Holder, was by me duly sworn before giving his testi-

mony on the 9th day of June, 1880, and by consent of counsel subscribed to the stenographer's notes.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

The redirect examination of WILLIAM FOWLER continued, as follows:

By Mr. BRIESEN:

Q. 145. Mr. Fowler, did you investigate the matter of the sale by defendants of the infringing carpets after the injunction?

A. Yes, sir.

Q. 146. With what result?

A. I found that I was mistaken as to its having been after the injunction; it was after the notice had been served that they sold it.

Q. 147. After the notice to stop had been served?

A. Yes, sir.

89 Q. 148. Did you bring an exact extract from your books of the number of pieces of the carpet here in controversy that the Hartford Company had sold first, before July 1, 1879, and secondly, after July 1, 1879?

A. Yes, sir.

Counsel for defendants specially objects; the books being in existence, and being the best evidence, should be produced, and he calls for them.

Counsel for complainant declines to produce the books, as they contain matters, such as names of customers and transactions relating to other business not here involved, and as therefore not fit for publication or for examination by counsel for a competing house.

Counsel for complainants now gives notice that on the summing-up before the master he shall demand the production of the defendants' books showing all the entries relating to the sales of infringing carpets; also all the entries relating to the arrival from the factory of the infringing carpets here in controversy.

Counsel for defendants gives counsel for complainants notice that the books are at his disposal whenever he properly subpœnas them, or whenever he is examining a witness who is giving testimony based upon knowledge obtained from those books.

Q. 149. What is the extract?

A. From January 1 to July 1, 1879, we sold of 1161 G. body, stair and border, 850 pieces; and from July 1, 1879, to June 1, 1880, 406 pieces.

Cross-examined by Mr. BUCKLEY:

Cross-Q. 150. How long does the season last in the carpet trade?

A. Six months.

Cross-Q. 151. Is there a spring and fall trade?

A. Yes, sir; that takes the six months.

Cross-Q. 152. Does not a carpet season mean the spring season?

A. Yes.

90 Cross-Q. 153. And is not the fall trade called another season?

A. Yes, sir.

Cross-Q. 154. What have you given the present memorandum of the number of pieces sold from?

A. That is the actual number of pieces which we have sold.

Cross-Q. 155. You give that from a memorandum at present in your hands, do you not?

A. Yes, sir.

Counsel for defendants calls for memorandum; the witness produces it. Offered in evidence by complainants' counsel, and the same is marked "Exhibit Fowler's Mem.," June 9, 1880.

WILLIAM FOWLER.

Sworn to before me, this 9th day of June, 1880.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

91 COMPLAINANTS' EXHIBIT.—FOWLER MEM.—JUNE 9, '80.

P. O. Box 3977.

REUNE MARTIN, Agent for the Hartford Carpet Company,
Nos. 114 and 116 Worth street,
NEW YORK, *June* 9, 1880.

Number of pieces of 1161 G. body, stair, and border sold.

From Jan'y 1 to July 1, 1879	830 ps.
" July 1, 1879, to June 1, 1880	406 ps.

Complainants rest, but give notice, as before, that he desires the production of defendants' books, hereinbefore referred to, for use at the summing up before the master, and if defendants' counsel will not promise to produce them a subpœna to that effect will be made out at the defendants' own expense.

Counsel for defendants, in pursuance of the stipulation entered into, to save unnecessary writing and interpolations between questions and answers, now objects to the whole line of this examination as immaterial and irrelevant, presumptive and incompetent, and the objections above made are reiterated, in accordance with the said stipulation, and with the same effect as though made when each question was propounded; the cross-examination of the witnesses being *de bene esse*.

Testimony closed.

Adjourned.

92 United States Circuit Court, Eastern District of Pennsylvania.

THE BIGELOW CARPET CO.
vs.
J. & J. DOBSON. } In Equity.

THE SAME
vs.
THE SAME. } In Equity.

THE HARTFORD CARPET CO.
vs.
THE SAME. } In Equity.

STATE OF NEW YORK, }
County of New York, } *ss:*

I, Willy G. E. Schultz, a notary public in and for the county of Kings, State of New York, my certificate being duly filed with the clerk of the county of New York, State of New York, do hereby certify that the depositions of the foregoing witnesses, William James, of New York city, N. Y.; David M. Read, of Bridgeport, Conn.; John H. Worth, of Westfield, N. J.; William Fowler, of Orange, N. J., and Francis F. Holder, of Yonkers, N. Y., were taken before me, by a stenographer, and by consent of counsel for the respective parties, and pursuant to notice hereto attached, and upon a day to which the taking of testimony had been adjourned by consent of counsel. That the said witnesses were by me, before giving their testimony, duly sworn and cautioned to tell the truth, the whole truth, and nothing but the truth, and that the said depositions were taken for the use of the master, under the reference in the above cases; and further, that counsel for the respective parties were present at the time of taking the foregoing depositions.

[SEAL.] WILLY G. E. SCHULTZ,
Notary Public, Kings Co., N. Y.

Certificate filed N. Y. Co.

93 And afterwards, to wit, on the 8th day of March, A. D. 1881, the complainants, by their counsel, come into our said court here and files an affidavit sur motion to refer back the report of the master, which being read, is as follows, to wit:

United States Circuit Court, Eastern District of Penna.

BIGELOW CARPET COMPANY
vs.
DOBSON. } In Equity.

BIGELOW CARPET COMPANY
vs.
DOBSON. } In Equity.

HARTFORD CARPET COMPANY
vs.
DOBSON. } In Equity.

EASTERN DISTRICT OF PENNA, *ss:*

Joseph C. Fraley, having been duly affirmed, deposes and says: I am the solicitor for complainant in each of the above cases. Some
94 time in January, 1881, I received notice that the master's report therein had been filed, but would be retained by the master until February 1st, 1881, for the filing with him of exceptions, &c.

On the 31st day of January, 1881, I received from A. v. Briesen, Esq., counsel for complainant, a motion paper, which he requested me to file with the master before February 1st; said paper was a motion to reopen the proofs. I went immediately to the office of the master, and was informed by his clerk there that he was out of town, and would probably return in some days, upon which I left word that I was anxious to see him. On the morning of February 1st the master called at my office and asked what I wished to see him for, and upon my stating to him that I desired to sub-
95 mit a motion to reopen the proofs said that he thought it was too late, as he had just deposited his report with the clerk that morning.

JOS. C. FRALEY.

Affirmed & subscribed before me, this 8th day of March, 1881.
SAMUEL BELL,
U. S. Com'r.

(Endorsed:) U. S. circuit court, east. dist. of Pa. In equity. Bigelow Carpet Co. *vs.* Dobson. Affidavit. Filed March 8th, 1881.

96 And afterwards, to wit, on the 8th day of March, A. D. 1881, this cause came on to be heard on motion to refer back the report of the master, whereupon the court made the following order, to wit:

U. S. Circuit Court, Eastern Dist. of Penna. In Equity.

BIGELOW CARPET COMPANY *v.* DOBSON.

SAME *v.* SAME.

HARTFORD CARPET COMPANY *vs.* SAME.

And now, to wit, this eighth day of March, 1881, on motion of complainants' counsel and affidavit filed, it is ordered that the master's report in each of the above cases be referred back
97 to said master, with power to entertain a motion to reopen the proofs therein, and to make such further order respecting the proceedings before him as he may deem expedient.

(Endorsed:) U. S. circuit court, east dist. of Pa. In equity. Big-

elow Carpet Co. *v.* Dobson. Same *v.* Same. Hartford Carpet Co. *v.* Same. Order referring back the report of master, Entered & filed March 8, 1881.

98 And afterwards, to wit, on the 8th day of July, A. D. 1881, the master files his supplemental report, which, being read, is as follows, to wit:

United States Circuit Court, Eastern District of Pensylvania.

HARTFORD CARPET COMPANY *vs.* DOBSON *et al.*

BIGELOW CARPET COMPANY *vs.* DOBSON *et al.* } Two Cases.

Supplemental report of the master appointed in the above cases, *sur* motion made on behalf of the complainants, and argued before him April 9, 1881, under the order of court made herein March 8, 1881.

To the honorable the judges of the said court:

The master, to whom this cause was returned with instructions to entertain and pass upon such motion with respect to reopening the testimony as should be made herein by the complainants, respectfully reports:

That on Saturday, April 9, 1881, a motion founded on the attached notice and affidavit was made before him by counsel for the complainants, and argued by said counsel and by counsel for the defendants.

It was urged on behalf of the complainants that their refusal to produce certain books of account, with respect to which some
99 of their witnesses testified under objection, and an unavailing call for said books on the part of counsel for the defendants, was a refusal conditional on the ruling of the master; and that the master not having ruled on the question until the filing of his report, they should now be allowed to produce said books, and take further testimony explanatory thereof.

The call for the books, above noted, was only made in one of the three cases, viz., that in which the Hartford Carpet Company is complainant, similar testimony having been taken in the other two cases without specific objection, and duly considered by the master in drawing his reports therein.

For the reason stated in the reports filed in said two cases (those of the Bigelow Carpet Company *vs.* Dobson *et al.*), the master is of the opinion that even if the facts testified to under the above objection, and call for the books, were before him without objection, and as admittedly true, the Hartford Co. would still have failed to prove what damage they had sustained by reason of the defendants' infringement of their design patent, and he, therefore, can see no good reason for reopening the record in that case and allowing evidence already determined in the same record (for the testimony in these

three cases was all taken together, and forms one record), to be incompetent to show the damage suffered by said complainant to be introduced. With regard to the cases of the Bigelow Carpet Company against Dobson *et al.*, the master is of the opinion that the motion is misentitled therein, since, as above stated, testimony of the nature specified in the notice was taken therein without objection, and considered by the master in drawing his report therein.

With respect to the case of the Bigelow Company *vs.* Dobson *et al.*, No. 35, in which, as stated in the affidavit hereto attached, the complainant, through a misunderstanding of counsel, failed to prove the amount of carpet of the infringing design made by the defendants, and the amount of profit accruing by reason of said sales, the master is, by reason of the fact that the proof referred to was in evidence in the record, with respect to the other case, brought by the same complainants, and was given due consideration therein, unable to see that the said complainant was in any way prejudiced by the omission, especially as on the argument counsel for
100 the complainants expressly waived the question of profits, and stated that he confined his claim entirely to damages.

The master, therefore, having had all the testimony now sought to be introduced before him in the record in question, and having, in his report in the case of the Bigelow Co. *vs.* Dobson *et al.*, No. 34, made his report on a case embracing all the facts now sought to be supplied in the other two cases, is of the opinion that sufficient cause has not been shown to justify him in reopening the record, and therefore he refiles his reports herein, as heretofore drawn.

Respectfully submitted,

FRANCIS T. CHAMBERS, *Master.*

(Endorsed:) United States circuit court, eastern district of Pennsylvania. Hartford Carpet Co. *vs.* Dobson *et al.*, No. 30. Bigelow Carpet Co. *vs.* Dobson *et al.*, Nos. 34 & 35. April sess., 1879. Supplemental report of the master. Filed July 8, 1881.

101 And afterwards, to wit, on the 27th day of July, A. D. 1881, the complainants, by their counsel, come into our said court here and file exceptions to the supplemental report of the master, which, being read, is as follows, to wit:

United States Circuit Court, Eastern District of Pennsylvania. In Equity. April Sessions, 1879.

THE BIGELOW CARPET COMPANY
vs.
JOHN and JAMES DOBSON, trading as John and James Dobson. } No. 35.

Exceptions by and on the part of the Bigelow Carpet Company, complainant in the above-entitled suit, to the report of Francis T. Chambers, Esq., master, to whom this cause was referred by an order entered herein at the April term of this court, in the year 1879.

First. The said complainant excepts to the finding and report of

the said master, for that he fails to find and report the profits which the said defendants made by their infringement of the letters patent in controversy; whereas the proofs show that the defendants did make certain profits by reason of their said infringement, and also show the amount thereof, and the decree appointing the said master directed him to take an account of said profits.

Second. The complainant further excepts to the report of said master, for that said master does not find and report that the complainant made a profit on carpets embodying the patent design in controversy in this case, and what the profit on the said carpets was; whereas the testimony before said master shows that there was a profit to the complainant, and gives a basis for fixing the average profit.

Third. Complainant further excepts to the report of the said master, for that he fails to find and report that there was a
102 falling off in complainant's sales of carpets embodying the patent design and the extent thereof, and that said falling off appears to have been due solely to the infringement of the defendants in this suit.

Fourth. The complainant further excepts to the report of said master, for that he fails to find what is the lowest estimate shown by the evidence before him for loss of sales caused complainant by defendants' infringement, and to report said estimate as the loss of sales so caused at the lowest calculation; whereas the said master, from the evidence, could and should have so found and reported.

Fifth. The complainant further excepts to said report, for that the said master does not find what was the decrease of complainant's sales due to the infringement by these defendants; whereas the evidence before him was sufficient to enable him to determine said decrease of sales.

Sixth. The complainant further excepts to said report, for that the master fails to find that one element of the damage caused complainant by the defendants' infringement was the profit complainant would have made on the carpets embodying the patented design, whose sales complainant lost on account of defendants' infringement; whereas the master should have so found and reported.

Seventh. The complainant further excepts to said report, for that the master fails to find and report the amount saved by the defendants by copying the design in controversy from the complainant instead of producing it as an original design themselves; whereas the evidence shows what it cost to produce this patented design.

Eighth. The complainant further excepts to said report, for that the master awards to the complainant the sum of six cents as damages for the infringement by the defendants of the design patent in controversy; whereas the said master should have fixed the amount of complainant's damage at a sum other and greater than that which he has reported.

July 27, 1881. BRIESEN & BETTS,
Sol'rs for Compl't.

103 (Endorsed:) No. 35. April sess., 1879. U. S. circuit court, E. D. of Pennsylvania. The Bigelow Carpet Co. *vs.* John

Dobson and James Dobson. In equity. Exceptions to master's report. Briesen & Betts, sol'r for compl'ts, 229 Broadway, New York. Filed July 27, 1881.

104 And afterwards, to wit, on the 19th day of January, A. D. 1882, this cause coming on to be heard on exceptions to masters' report, and having being argued by counsel for the respective parties, the same is held under advisement.

And afterwards, to wit, on the 27th day of January, A. D. 1882, the court, by the Hon. William McKennan, circuit judge, file the following opinion, to wit:

THE BIGELOW CARPET CO. *vs.* JOHN & JAMES DOBSON. } No. 34. Ap'l Term, 1879.

SAME PL'FFS *vs.* SAME DEF'TS. } No. 35. Same Term.

THE HARTFORD CARPET CO. *vs.* SAME DEF'TS. } No. 30. Same Term.

105 McKENNAN, Cir. J.:

These were all suits for infringement by the respondents of designs for carpets patented to the complainants. The infringing designs are exact counterparts of the patented ones, and carpets embodying them were put upon the market by the respondents some time after the date of the patents and the introduction of carpets containing the designs described in them by the complainants. No defence was made by the respondents, and they, therefore, occupy the attitude of willful infringers.

Under these circumstances the respondents ought to be held to the most rigid accountability, and no intendment ought to be made in their favor founded upon the alleged inconclusiveness of the complainants' proof of loss. On the other hand such proof ought to be considered and interpreted most liberally in favor of the complainants, within the limit of an approximately accurate ascertainment of their damages.

The master has not so dealt with the evidence presented to him, and has, therefore, fallen into error in his conclusion. He has found nominal damages only in favor of the complainants, although they furnished proof, by which the damages claimed by them might, to some extent at least, be legally measured.

In this category is the evidence of the number of pieces and yards of the complainants' carpets during the season of its first introduction upon the market, the cost per yard of their manufacture and the prices at which they were sold in the market, the number of pieces and yards of infringing carpets made and sold by the respondents in the following season, and the very large decline in the com-

plainants' sales during this period. It furnishes the means of accurate computation of the complainants' profits, and of the extent to which the market was occupied by the respondents. All that is left for presumption is that the infringing carpets displaced in the market the complainants' carpets, and hence that the profits which would have accrued to them upon the quantity of carpets put upon the market is the measure of their damages.

This presumption, as against a wrong-doer, is not unreasonable, and it has the sanction of numerous decisions: Putnam *v.* Lomax, 9 Fed. Rep. 448; American Saw Co. *v.* Emerson, 8 Fed. Rep. 886; McComb *v.* Brodie, 2 O. G., 117; Westlake *v* Cartter, 4 O. G., 636.

Upon this basis there is no difficulty in stating an account against the respondents. And this is the only one upon which, under the evidence, the complainants' damages can be computed. It is enough for us to say that the losses claimed for the entire decline in the complainants' sales, and on looms, are too remotely connected with the defendants' acts as their supposed cause, and hence are too speculative in their character to entitle them to allowance.

It sufficiently appears that the respondents made and sold 20 pieces of 55 yards each, 1,100 yards in all, of carpets containing the design described in No. 30 of April term, 1879 and that the complainants' profit upon carpets of that design was 67 cents per yard. They lost, therefore, this sum upon 1,100 yards, and their damages amount to $737, for which a final decree must be rendered in their favor.

In No. 34, April term, 1879, which is founded upon the patent for what is popularly called the "pagoda pattern," the respondents made 20 pieces of 50 yards each, in all 1,000 yards, the profit of complainants for like carpet being 75 cents per yard. The respondents have not disclosed what became of the carpets thus made by them, and they are, therefore, held accountable for them as if put upon the market. The complainants' damages in this case are then 75 cents upon 1,000 yards, equal to $750, for which a final decree will be entered in their favor.

In No. 35, April term, 1879, the respondents made 53 pieces of the Chinese lantern *patent* of 50 yards each, but sold only 35 pieces, the rest having been sealed up by the marshal. The complainants' damages in this case are therefore 75 cents upon 1,750 yards, amounting to $1,312.50, for which a final decree will be entered in their favor.

(Endorsed:) Nos. 30, 34, & 35, April sess., 1879. C. C. U. S., E. D. of Pa. Bigelow Carpet Co. *vs.* Dobsons. Three cases. Opinion, &c. Filed January 27, 1882.

106 And afterwards, to wit, on the 14th day of February, A. D. 1882, the court enter the following decree, to wit:

United States Circuit Court, Eastern District of Pennsylvania. In Equity. April sess., 1879.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON, trading as John & James Dobson, and also as "The Falls of Schuylkill Carpet Mills." } No. 35.

And now, to wit, this 14th day of February, 1882, this cause having come on to be heard upon exceptions to the report filed herein on the 8th day of July, 1881, by Francis T. Chambers, Esq., the master appointed by the interlocutory decree entered herein on the 2nd day of September, 1879, and having been argued by counsel for complainant and counsel for defendants, after consideration thereof, it is ordered, adjudged, and decreed that the said exceptions be sustained, and that the findings of the master as to said profits and damages be overruled; and it is further ordered, adjudged, and decreed
107 that the damages suffered by complainant in consequence of the unlawful sale by defendants of carpets in infringement of the design patent No. 10870, referred to in said interlocutory decree, amounted to the sum of thirteen hundred and twelve dollars and fifty cents; and it is further ordered, adjudged, and decreed that the complainant do recover from the defendants the said sum of thirteen hundred and twelve dollars and fifty cents, together with the costs of this suit, taxed at one hundred and one dollars and ninety-seven cents, making in the aggregate the sum of fourteen hundred and fourteen dollars and forty-seven cents; and that the complainant have execution therefor.

And it is further ordered, adjudged, and decreed that the injunction heretofore ordered and issued against the said defendants be made perpetual.

(Endorsed:) No. 35. Ap'l sess., 1879. U. S. C. C., east. dist. of Pa. In equity. Bigelow Carpet Co. *vs.* Dobson. Final decree. Entered and filed February 14, 1882.

108 And on the day and year last aforesaid the respondents, by their counsel, George E. Buckley, Esq., appear in open court and pray an appeal to the Supreme Court of the United States, and thereupon the court made the following order, to wit:

U. S. Circuit Court, E. D. of Pa. April Sess., 1879.

THE BIGELOW CARPET CO.
vs.
JOHN & JAMES DOBSON. } No. 35.

And now, to wit, this fourteenth day of February, A. D. 1882, George E. Buckley, counsel for defendants, appearing in open court, prays an appeal to the Supreme Court of the United States from the decree of this honorable court, entered February 14, A. D. 1882, upon the exceptions of the complainant to the account of the master, filed

in above cause, fixing complainants' damages, including costs, at $1,414.47.

Which appeal is allowed with security in the sum of $3,000.

109 (Endorsed:) No. 35. April sess., 1879. C. C. U. S., E. D. of Pa. Bigelow Carpet Co. *v.* Dobson *et al.* Order allowing appeal to the Supreme Court U. S., with security in $3,000. Entered & filed February 14, 1882.

110 In the Circuit Court of the United States, in and for the Eastern District of Pennsylvania, in the Third Circuit. April Sess., 1879.

THE BIGELOW CARPET COMPANY
vs.
JOHN DOBSON and JAMES DOBSON, doing business under the name and style of John and James Dobson, and of "The Falls of Schuylkill Carpet Mills." } No. 35.

Know all men by these presents, that we, John Dobson and James Dobson, as principals, and Sevill Schofield, No. 4216 Main St., Manayunk, and William Arrott, No. 2010 Spring Garden St., all of the city of Philadelphia, and State of Pennsylvania, are held and firmly bound unto the above named, The Bigelow Carpet Company, in the sum of three thousand dollars ($3,000), to be paid to the said The Bigelow Carpet Company, their certain attorney, successors, or assigns, to which payment, well and truly to be made, we bind ourselves, our respective heirs, executors, and administrators, jointly and severally by these presents.

Sealed with our seals, and dated this 28th day of February, A. D. 1882.

Whereas, lately, at a circuit court of the United States, in and for the eastern district of Pennsylvania, in the third circuit, in a suit depending in the said court between The Bigelow Carpet Company, complainant, and John Dobson and James Dobson, doing business under the name and style of John and James Dobson, and of "The Falls of Schulkill Carpet Mills," respondents, a final decree was rendered against the said John Dobson and James Dobson, doing business as aforesaid, and the said John Dobson and James Dobson, doing business as aforesaid, having taken an appeal, which appeal has been allowed by the said circuit court to the Supreme Court of the United States, to reverse the said decree in the aforesaid suit:

111 Now the condition of this obligation is such that if the said John Dobson and James Dobson shall prosecute their said appeal to effect, and answer all damages and costs, if they fail to make their appeal good, then this obligation to be null and void; otherwise to remain in full force and virtue.

JOHN DOBSON. [SEAL.]
JAMES DOBSON. [SEAL.]
SEVILL SCHOFIELD. [SEAL.]
WILLIAM ARROTT. [SEAL.]

Sealed and delivered in the presence of—
SAMUEL BELL.
W. VON A. WILHAMSON.

Approved in open court February 28, 1882.
SAMUEL BELL, *Clerk.*

[Endorsed:] No. 35. April sess., 1879. Circuit court of the United States. The Bigelow Carpet Co. *vs.* Dobson *et al.* Bond sur appeal. Filed February 28, 1882.

112 UNITED STATES OF AMERICA, }
Eastern District of Pennsylvania, } *sct:*

I, Samuel Bell, clerk of the circuit court of the United States of America for the eastern district of Pennsylvania, in the third circuit, do hereby certify the foregoing to be a true and faithful copy of the original record and proceedings in the case of The Bigelow Carpet Company, complainant, and John Dobson and James Dobson, trading as John and James Dobson, &c., respondents, on file and now remaining among the records of the said court in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the seal of the said court, at Philadelphia, this fifteenth day of June, in the year of our Lord one thousand eight hundred and eighty-two, and of the Independence of these United States the one hundred and sixth.

[SEAL.] SAMUEL BELL,
Clerk of C. C.

Endorsed on cover: E. Pennsylvania C. C. U. S. No. 233. John Dobson and James Dobson, trading as John and James Dobson, and also as "The Falls of Schuylkill Carpet Mills," appellants, *vs.* The Bigelow Carpet Company. Filed 7 July, 1882.

114-439

Office Supreme Court U. S.
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JAMES H. McKENNEY,
Clerk.

Supreme Court of the United States.

No. 233. October Term, 1884.

JOHN DOBSON AND JAMES DOBSON,
Appellants,

vs.

THE BIGELOW CARPET COMPANY.

BRIEF FOR APPELLANTS.

HECTOR T. FENTON,
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Counsel for Appellants.

PHILADELPHIA:
DUNLAP & CLARKE, Printers, Hastings' Building, 819-21 Filbert Street.
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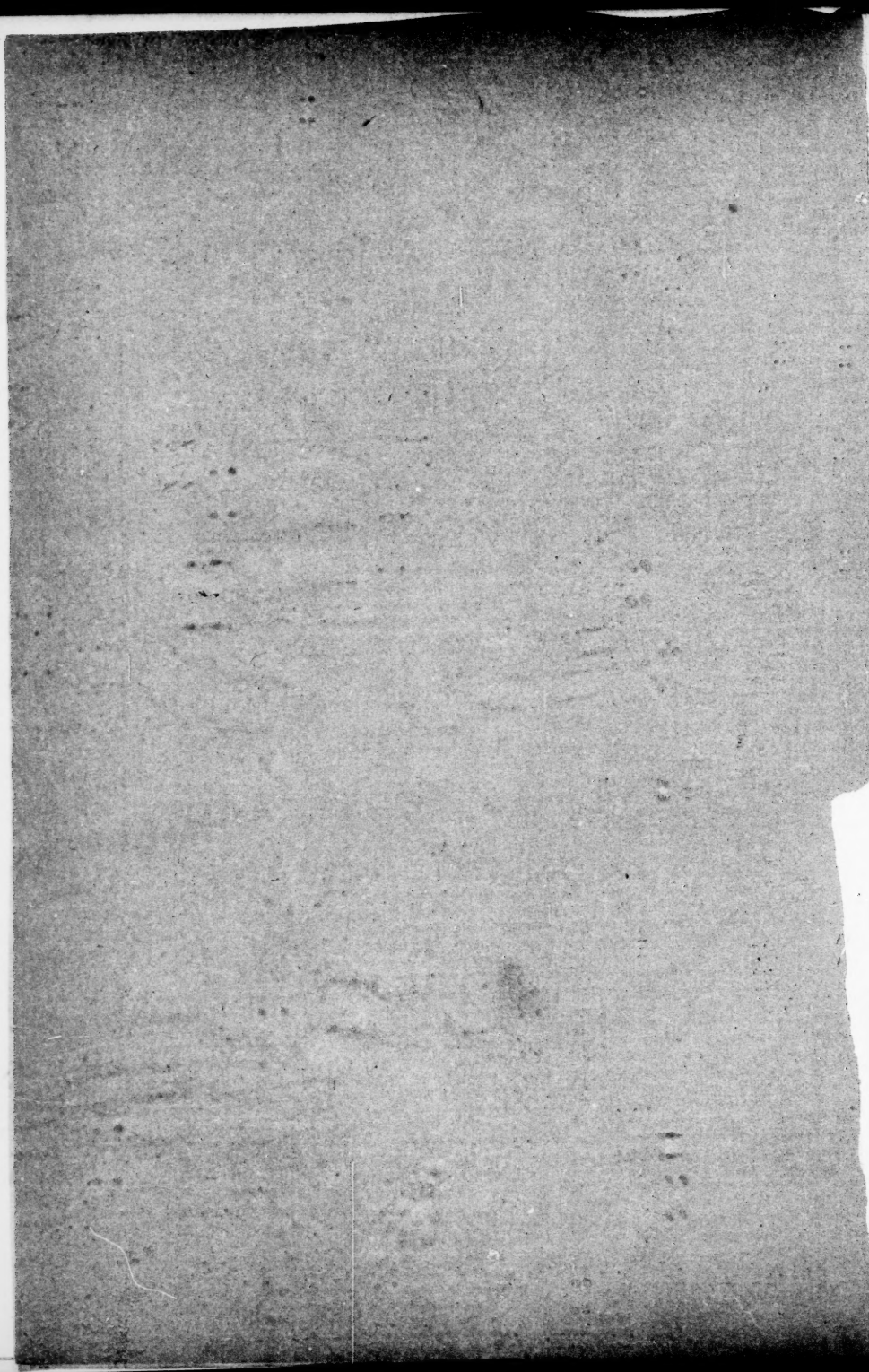

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THE BIGELOW CARPET COMPANY,
Appellee.

No. 233.

October Term, 1884.

STATEMENT OF THE CASE.

This is an appeal from the Circuit Court of the United States, for the Eastern District of Pennsylvania, by John Dobson and James Dobson, who were defendants below, and against whom the said Court entered a decree in equity for the payment of $1,312.50 and costs, and awarding a perpetual injunction, at the suit of The Bigelow Carpet Company, appellee and complainant below.

The bill is founded on Letters Patent of the United States, No. 10,870, dated October 15, 1878, for the term of three and a half years, granted to The Bigelow Carpet Company, as assignee of Charles Magee, for a design for carpets.

The bill charged infringement by appellants in the unlawful use of said design in the manufacture of carpets, in infringement of the exclusive rights of the appellee secured by the patent. No defence was made, and a decree *pro confesso* was entered on 2d September, 1879, awarding an injunction, as prayed for, and referring the cause to a Master, to take an account of "the "gains and profits, which the said defendants have made by "their aforesaid acts of infringement, and also the damages "which the complainant has sustained thereby," together with costs.

In pursuance of his appointment, and by virtue of this decree, the Master heard the parties and their witnesses, and after careful consideration filed his report and supplemental report, to which exceptions were filed in due season by the appellee. The matter of these exceptions came on to be heard by the Circuit Court, and was argued by counsel, whereupon the said Court, on the fourteenth day of February, 1882, entered a decree, overruling the findings of the Master, sustaining the complainant's exceptions to his report, and awarding damages to the complainant, as stated, with costs, whereupon the defendants appealed to this Court.

INTERLOCUTORY AND FINAL DECREES.

The interlocutory decree awards, to the complainant, profits and damages, in the form usually adopted for infringement of patents for mechanical inventions. The Master states in his report that the complainant, on the hearing before him, "expressly waived and abandoned all claim to the gains and profits which had accrued to the defendants by reason of the infringement, and limited his claim to the damages which it is alleged it sustained

thereby." [See Master's Report, Record, page 8, folio 15.] And the Master has, no doubt, stated the fact correctly, as would appear from the language of the final decree [Record, page 63, folio 107], in which it is decreed "that the damages suffered," etc., amount to the sum awarded; and this is in accordance with language of the opinion contained in the 3d paragraph of page 62 of Record.

SUBJECT MATTER OF THE PATENT; AND HEREIN OF THE ISSUES ARISING UNDER THE REFERENCE TO THE MASTER.

The patent, in its title, purports to be for a "Design for Carpet;" in the body of the specification it is said that "this invention relates to a new and original design for a carpet, oil-cloth, or similar fabric," and that "it consists of the new arrangement and ornamentation of figures in the body and in the border of the carpet, as hereinafter described." The drawings annexed to the patent consist of a photographic illustration of a face view of the design. [See Record, page 14, folio 33.] The descriptive part of the specification [Record, page 14] gives very little, if any, more information than is conveyed by an inspection of the drawings or photograph of the design; the whole "description" consisting of the following paragraphs:

"In the photographic illustration, which represents a face "view of my newly-designed carpet, the letter *a* is an irregular "shield-like figure, surrounded by a border embellished by "floral decorations; *b b* are two figures of different ground-"color than the shield *a*, and arranged at opposite sides diag-"onally of each shield. Both figures *b b* are irregular, and

"made of the same design. *c c* are tassel-like ornaments, "arranged beneath the several figures *a*. The carpet is em- "bellished by the representation of bouquets *d* and other floral "ornamentations. The border of the carpet contains an inner "plain stripe, *f*, an outer zigzag stripe, *g*, having inwardly- "projecting semicircular ornaments *h*. Between the stripes *f* "and *g* are representations of shields resembling the shield *a*, "and floral decorations that extend over the stripe *f*, as shown. "The tassel-like ornaments *c* are also in the border."

There is a single claim, in the following words—"the design for a carpet, substantially as shown."

An analysis of the specification fails to give any idea of the alleged new design, and the claim itself is general, and refers the public not to the *description* to find out where the novelty resides, but to the drawing, as evidenced by the use of the word "shown" at the end of the claim. The description is exceedingly general in its terms; and is not sufficient under the statute, which requires a description in full, clear and exact terms, pointing out wherein the invention consists, distinguishing between what is old and what is new, and in conclusion shall "point out and distinctly claim the part, improvement or combination" claimed.

A specification which in its opening clause, impliedly admits that the invention consists of old elements, that the novelty resides in their arrangement and ornamentation, that does not attempt to describe such new arrangement and ornamentation, but simply refers to a, b, and c, in the drawing, without stating the features of each, or of their arrangement with respect to each other, or of their ornamentation; and concluding with a claim, which names no parts, does not refer to the description, but is in the words "the design for a carpet sub-

stantially as *shown*" (in the drawings, and not found described in the specification,) is, if not void for ambiguity and uncertainty, at least open to criticism.

It appeared by the proofs before the Master that the appellants had made 50 pieces of carpet bearing this design, and had sold 31 pieces, having 19 pieces on hand when the injunction issued. (See Record pages 12 and 15.) There was no attempt to show that the appellants had made any profits thereon, and the statement on page 15 of record, would indicate that none were made.

But if the appellants had actually made any profit on the carpet bearing the patented design, and if the appellee had proved the same, the entire profit on the manufacture and sale of the carpet did not belong to the patentee; hence the appellee made formal waiver of "profits and gains," as such, awarded by the decree, and based its claim for "damages" upon speculative losses, caused by a decline in the market of the demand for its carpets of that pattern, leaving it wholly to inference that the supposed sales by appellants was the sole cause of such decline; and for losses on other items remotely connected therewith; and wholly failed to show any actual damage, by competent proof; hence the Master naturally and properly reported nominal damages only. The exceptions to the report, taken by the appellee, covered every possible ground on which any substantial sum of money could be awarded under the decree (presuming that there had been evidence to support any of them), whether as profits, or as damages in the form of profits which the appellees thought they would, or ought to have made, had they sold the same number of yards of carpet after the alleged infringement as they did before. The final decree recites that the complainants' ex-

ceptions were sustained; but it is clear, from the opinion of the Court [see Record, page 60], that the first and eighth exceptions were not entertained, and that the subject matter of the remaining exceptions only, formed the basis of the conclusion reached by the Court.

It seems that all the testimony before the Master, found in this record, does not apply to the present case, but was taken generally in all three cases referred to in this record, to be used in each so far as applicable, said cases being against the same defendants, and now in this Court by appeal, as Nos. 231, 232, and 233, of October Term, 1884. The testimony of William Fowler (Record, pages 38 and 50), relating only to case No. 231, in which the Hartford Carpet Company is the appellee.

ASSIGNMENTS OF ERROR.

I. The Court below erred in setting aside the Master's report, and refusing to confirm the same, and enter a decree in conformity therewith.

II. The Court below erred in not entering a decree for six cents damages, as recommended by the Master; because there was no evidence that the appellants had made any *gains or profits* on the carpet made and sold by them; and there was no competent evidence as to what *damage*, if any, the appellee had sustained by the alleged infringement.

III. The Court below erred in awarding any profits, or damages, to the appellee, under the evidence, because the measure of profits, or of damages, for infringement of a design patent, is not the whole profit on the manufacture and

sale of the carpet bearing the design, but any increased value given to the goods by reason of such design, as to which there was no evidence whatsoever.

IV. The Court below erred in applying an entirely erroneous measure of damages to ascertain what, if anything, should be paid by the defendant, under the interlocutory decree.

V. The Court below erred in sustaining appellees' second exception to the Master's Report, which was as follows:

"The complainant excepts to the report of said Master, for that the said Master does not find and report that the complainant made a profit on carpets, embodying the patented design in controversy in this case, and what the profit on said carpets was; whereas, the testimony before said Master shows that there was a profit to the complainant, and gives a basis for fixing the average profit;" because there was no competent evidence, or any evidence, to sustain the propositions contained in the exception; and, if there had been, the amount of *complainants alleged* profits does not furnish a proper measure to ascertain *defendant's* profits, or plaintiff's damages, for the alleged infringement complained of.

VI. The Court below erred in sustaining the appellee's third exception to the Master's report, which was as follows:

"Complainant further excepts to the report of said Master, for that he fails to find and report that there was a falling off in the complainants' sales of carpets, embodying the patented design, and the extent thereof, and that said falling off appears to have been due solely to the infringement of the defendant in this suit;" because there was no competent or sufficient evidence of any falling off of complainants' sales, and the Master so reports; and because there was not a scintilla of evidence that, if there was any such decline in complainants' sales, it was

due, in whole or in part, to the alleged infringement; indeed, the learned judge, in his opinion, concedes this where he says, "All that is left for *presumption* is that the infringing carpets displaced in the market the complainants' carpets;" a presumption which the Court had no right or authority to make, for it was, in fact, *presuming* that the appellee has sustained damage, without any legal proof thereof.

VII. The Court below erred in sustaining the appellee's sixth exception to the Master's report, which was as follows:

"The complainant further excepts to said report, for that the Master fails to find that one element of the damage caused by the defendant's infringement was the profit complainants would have made on the carpets embodying the patented design, whose sale complainants lost on account of defendant's infringement; whereas the Master should have so found and reported;" because there was no proof that the appellee would have made any profit on the carpet made and sold by appellants had the appellee made and sold the same; and also, because there was no competent or sufficient proof that the *appellee* made any profit on the carpet bearing the patented design, made and sold in its own establishment; and also, because, if there had been full proof of both or either of these items, the appellees would not have been entitled, under the law, to measure their alleged damage by the entire profit on the manufacture and sale of the carpet, but only such part, if any, due to the design printed or woven thereon.

VIII. The Court below erred in sustaining the appellee's eighth exception to the Master's report, which was as follows:

"The complainant further excepts to said report, for that the Master awards to the complainant the sum of six cents as

damages for the infringement by the defendants of the design patent in controversy; whereas the said Master should have fixed the amount of complainants' damages at a sum other and greater than that which he has reported;" because the Master was clearly right in awarding nominal damages only, in the absence of competent and sufficient proof, or any proof, of actual damage suffered by the alleged infringement.

IX. The Court below erred in not dismissing the bill, because the patent was void on its face.

POINTS OF ARGUMENT.

The patent, on which the bill is founded, was issued by virtue of Sects. 4929 to 4933 of the Revised Statutes, and such is the present law on the subject. Sect. 4929 provides that "Any person who, by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief; any new and original impression, ornament, pattern, print, or picture, to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful, and original shape or configuration of any article of manufacture, the same not having been known or used by others before his invention or production thereof, or patented or described in any printed publication, may, upon payment of the fee prescribed, and other due proceedings had, the same as in cases of inventions or discoveries, obtain a patent therefor." Sects. 4930, 4931, and 4932, regulate the term or terms of patents for designs, and the applications therefor; and Sect. 4933 provides that "All the regulations and provisions which apply to obtaining or protecting patents for inventions or dis-

coveries not inconsistent with the provisions of this title, shall apply to patents for designs." It is therefore clear that Sect. 4888, requiring that the specification shall contain a full, clear, and exact description, and shall particularly point out and distinctly claim the part, improvement, or combination "claimed," applies equally as well to design patents as to patents for mechanical discoveries; and also, perhaps, in like manner, Sect. 4921, which provides that in cases of decree for infringement, "The complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby," etc.; otherwise the patentee would be left to his remedy at law by action for damages for the tort.

Rules for the ascertainment of profits and damages under this section for the infringement of patents for mechanical inventions, are well settled and established by numerous recent decisions of this tribunal; but the application of these rules to cases of design patents is not free from extreme difficulty, and, indeed, apparently almost impossible.

Certain it is that the reports of the decisions of this Court contain no cases involving the direct question; and there are few, if any, in the reports of cases in the Circuits. This may be, and no doubt is, due to the fact that it is impossible to satisfactorily prove any actual damage in such cases.

A like dearth of authority on the subject exists in the reports of patent cases in England. There the design is protected by simple registry, accompanied by a deposit of copies of the design claimed; and the penalty for piracy under the recent Act of 46 and 47 Victoria, c. 57, better known as "The Patents, Designs, and Trade Marks Act of 1883," is the imposition of a penalty or forfeit not exceeding fifty pounds sterling

to the proprietor of the registered design; or the latter, at his election, may "bring an action for the recovery of any damages arising from the application of any such design." Under the previous law in that country, as stated in Mr. Emerson Tennent's treatise on copyright for designs (London, 1841), the remedy was, as he states it, "the retrospective one of an action on the case for damages (a course which has been resorted to only in one case for fifty years), and the prospective one of an application to the Court of Chancery for an injunction."

Conceding that the plaintiff, in a bill in equity for infringement of a patent for a design, is entitled to the relief given by the statute for infringement of a patent for a mechanical invention, the construction given to section 4921 Revised Statutes, has been that "profits" and "damages" are not convertible terms; that they mean different things; that one is to be in the place of or in addition to the other; that the former means what the defendant has actually gained, and the latter what the complainant has actually lost, by the wrongful use of the invention.

Vulcanite Company *vs.* Van Antwerp, 9 O. G. 497,

and see—

Bancroft *vs.* Acton, 7 Blatch., 505.

This Court has said,—

Root *vs.* Railway Company, 105 U. S. page 212,

that it is manifest that the recovery of damages and profits is not intended to be double, but that when necessary the damages are to supplement that loss of the complainant, which the profits found to have been received are insufficient to compensate, and see

Birdsall *vs.* Coolidge, 93 U. S. 64,

wherein it is said that gains and profits are still the proper measure of damages in equity suits, except in cases where the injury sustained by the infringement is plainly greater than the aggregate of what was made by the respondent.

With respect to patents for designs, such as for a carpet, oil cloth, calico print, or other pattern, in which the invention consists of mere ornamentation, as distinguished from configuration (both of which are protected under the act, but are widely different in character), it would be a harsh and unjust rule to compel an account of the entire profit made in the several stages of the manufacture of the goods. The patented ornamentation, or the novel configuration of an article, may or may not add to the saleability, or to the market value of the goods; on the other hand it may retard the former and decrease the latter. By analogy to mechanical patents, for parts of a machine held to infringe the patent, the plaintiff should be required, in the first instance, to show not only that the defendant obtained an advantage from the use of the thing patented, but the worth of the advantage.

Blake *vs.* Cemetery Company, 16 Fed. Rep. 676.

And that in the absence of such proof, the plaintiff should be awarded a nominal sum only.

In Schillinger *vs.* Gunther, 14 O. G. 713,

in which the patent was a mode of laying concrete pavement in blocks, the Court said that the patentee was not entitled to the profits on the *pavement*, but merely to the profits, if any, due to his special device. So in the case of a patent, which is for a mere ornamentation on, or novel configuration of, an article which has a clear value, *per se*, it would seem to be necessary for a substantial award to a patentee, in an infringe-

ment suit, to show affirmatively that the novel configuration, or ornamentation, gave an enhanced value to the article upon which it was used, or increased the demand for it, and the extent of such increase in value or in sales, for it is that value only which the defendant has wrongfully appropriated, and which belongs to the patentee, if he makes use of his invention in, or upon, similar articles. The current of recent decisions has changed, very much, the former opinion that patentees were entitled to manufacturers' profits, upon the whole thing made and sold, of which their inventions formed only a part, and better authority confines such claims to the actual profit, if any, due to the patented part.

Littlefield *vs.* Perry, 21 Wall. 205.
Mowry *vs.* Whitney, 14 Wall. 620.
Black *vs.* Thorne, 111 U. S. 122.
Garretson *vs.* Clark, 111 U. S. 120.
Maier *vs.* Brown, 17 Fed. Rep. 736.
Calkins *vs.* Bertrand, 8 Fed. Rep. 755.
Cawood Patent, 94 U. S. 695.

And the burden of proof rests upon the plaintiff, for no profits can be recovered without proof that the use of the invention contributed to the general profits of the defendants' business. And the same result follows *where it is impossible to show the profitable effect of using the invention* upon the business results of the party infringing.

Root *vs.* Railway Company, 105 U. S. 202.

And where the entire profit of the business is shown, it is incumbent on the plaintiff to give evidence separating the profits which can be allowed from those which cannot be

allowed; and in the absence of such proof, only nominal profits can be awarded.

Faulke *vs.* Kamp, 10 Fed. Rep. 675.

In the case at bar, we are relieved of the necessity for further discussing the question of what profits, as profits, the patentee is entitled to; for there was no evidence that they made any profits, either by the use of the design, or in the manufacture of the carpet upon which it was impressed or woven. And, as was said in Elizabeth *vs.* Pavement Company, 97 U. S. 126, "If an infringer of a patent has realized no profit from the use of an invention, he cannot be called upon to respond for profits."

The appellees, in the endeavor to obtain a substantial award, were therefore obliged to show damage by reason of the alleged infringement. The Master was of opinion that they had failed to establish the proposition, and he was clearly right in his conclusion. The matter of the third and sixth exceptions, stated in the sixth and seventh assignments of error, present the only subjects upon which the Court differed with the Master, and upon which the opinion and decree are based. In reaching his conclusion the learned Judge, upon insufficient and inadmissible evidence, found the *complainants'* profits upon *its* carpets to be a certain sum; and having the number of yards of carpet sold by the defendants, *presumed* that the infringing carpets displaced the plaintiffs' goods in the market, and hence that the *whole* profit which would have accrued to the complainants thereon, in every stage of the manufacture thereof, had they made and sold the same, is the measure of their damages, and ordered a decree accordingly.

There are several objections to this conclusion, not only on

the evidence as it appears in the record, but in the law. The statute gives "actual" damages.

Philp *vs.* Nock, 17 Wallace, 460.

And these must be proved, not guessed at. Ib.

In Seymour *vs.* McCormick, 16 Howard, 480, cited on this point in Root *vs.* Railway, 105 U. S. 197, the Court said that "actual damages must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact;" and this was said in a case in which the Circuit Court had instructed the jury that the plaintiff's damages might be determined by ascertaining the profits which, in judgment of law, he would have made, provided that the defendant had not interfered with his rights, and that the rule applied whether the patent covered an entire machine or merely an improvement on it. The instruction was decided to be erroneous. This Court said: What a patentee *would have made*, if the infringer had not interfered with his rights, is a question of *fact*. It is not a judgment of law or legal inference that third persons would have bought of the patentee what they bought of the infringer, if the latter had not made and sold the thing patented. Such a rule of damages would be better entitled to the epithet of *speculative* rather than *actual*. Nor is it proper to say to the jury that the same rule applies where the patent covers an entire machine or part of a machine; for by such a doctrine the defendant might be compelled to pay to a dozen different patentees of parts of the machine the profits on the whole, and "actual damages" to the plaintiff might be converted into an unlimited series of penalties on the defendant.

In Walker on Patents, sec. 563, after citing Seymour *vs.* McCormick, it is said: "In order to show that a patentee would

have made a particular profit, if an infringer had not forestalled his sales, it is necessary to show that he would, but for that infringer, have made those sales; and to that end it is necessary to show that he *could have supplied* the articles wanted, and that the persons wanting these articles *would have bought* them of *him* had no infringer interfered,—citing

Goodyear *vs.* Bishop, 2 Fisher, 161.
Magic Ruffle Company *vs.* Douglas, 2 Fisher, 340.
Sargent *vs.* Manufacturing Company, 17 Blatch. 247.
Ingersoll *vs.* Musgrove, 3 Bann. & Ard. 304.

The language of these cases applies with great force to the case at bar. The learned Judge was undoubtedly wrong in saying, in his opinion, and founding his judgment thereon, that "all that is left for *presumption* is that the infringing carpets displaced on the market the complainants' carpets, and hence that the profits which would have accrued to them upon the quantity of carpets put upon the market is the measure of their damages." No such presumption arose, and no such inference could be drawn from the mere act of infringement; it was a question of *fact*, vital to the plaintiffs' case, and the onus upon them to prove by affirmative evidence that the defendants' sales displaced plaintiffs' goods in the market. They not only failed to prove this, or offer any evidence that they *could have supplied the demand*, or that they *would*, or *could*, *have sold to defendants' customers* a yard of the carpet which defendants sold. Apart from this, there was no competent evidence of what profit, if any, the complainants realized on *their* carpets.

Under these circumstances the appellee was entitled to a nominal award only. To recover "actual damages" given by

the statute, it was bound to furnish evidence by which they might be assessed; such damages cannot be guessed at; they must be calculated, not imagined, and data must be furnished by the patentee to enable the same to be ascertained with reasonable accuracy. City of New York *vs.* Ransom, 23 How., 487; Burdett *vs.* Estey, 3 Fed. Rep., 566.

But the Court, even though it had been right upon the point last argued, was clearly wrong in measuring damages by the entire profit on the manufacture and sale of the carpet. It was the *design* that was patented, not the *carpet* as an article of manufacture. Had it been produced upon a patented loom, the appellants, under this ruling, would have been obliged to pay the whole profits twice on it; and had it been colored by a patent dye-stuff, they would have had a third time to pay the *whole* profit. And the inapplicability of the measure adopted by the Circuit Court would be still more apparent in case of a design patent for a new form or configuration. An article of the new form may very well be covered by two patents in the hands of different persons. A user of such article, if obliged to pay the whole profit to the owner of the design patent, would again be liable for the whole a second time to the patentee of the article itself, irrespective of its novel configuration or ornamentation. This reasoning, as shown in Seymour *vs.* McCormick, proves the justice of the rule that puts the onus on the patentee of showing not only that his invention gave value to the thing to which it was applied, but the extent of that value; it is this latter, and nothing else, that belongs to him, and for which the defendant is liable to account.

The recovery must be limited to such profits as arise from the manufacture and sale of the patented feature. The plaintiff's damages, too, must be proved, and not left to conjecture;

and *the fact that it is impossible to separate the profits arising from the improvement from those incident to the manufacture of the whole machine, is an insufficient reason for awarding the plaintiff more than he is justly entitled to receive.* Philp *vs.* Nock, 17 Wall., 460; Calkins *vs.* Bertrand, 8 Fed. Rep., 755; Gould Mfg. Co. *vs.* Cowing, 12 Blatch. 243. In case he is *unable* to prove how much of the entire profit upon the machine is due to the patented part, he can recover only nominal damages. Blake *vs.* Robertson, 94 U. S. 728.

There was no proof of either profits or damages here; indeed the latter were *presumed*, and upon insufficient evidence of an alleged falling off in appellee's sales of *a* carpet (not necessarily or in fact the same kind as appellants) bearing the design, and this alleged decrease was *inferred* to be due to the alleged infringement; nor was there an attempt to show any increase in demand over *other* carpets, or any increase in market value of *the* carpet by reason of the patented design. The record is barren of any proof on which a substantial award could legally be founded.

As was said in Maier *vs.* Brown, 17 Fed. Rep., 737—"Defendants sales may have been the result of superior energy, diligence and business capacity, or of the incidents of trade; and we think the burden is on the plaintiff to show that such sales were attributable to the increased value given to the article by the patent."

A design, either as a novel form or configuration of an article, or as an ornamentation thereof, may, if it does not happen to suit the public taste, just as likely retard and stop the sale of the article, to which the new form or ornament is given as increase it, and, in judgment of law, a thing does not necessarily possess any inherent, intrinsic, or even commercial value,

or impart such to anything to which it is attached or forms a part, merely because it is patented. This is purely a question of fact, and must be proved, as any other fact in the case necessary to support the decree must be proved, by competent and sufficient legal proof.

Again, the patent says the design is applicable to carpets, oil cloths, and similar articles. The inapplicability of giving the patentee, as damages, the whole profit upon the manufacture and sale of the carpet itself, and estimating the same upon the supposed loss of sales of *its carpets*, would be shown by supposing that the appellant's alleged infringement had consisted in stamping the design upon an oil cloth, or weaving it into an expensive tapestry, or weaving it in white threads in table linen, or printing it upon a window shade; all articles of a very different quality, and because, thereof, selling for a different price from those made by appellees, bearing the patented design in question.

In Westcott *vs.* Rude, 27 O. G. 719, it is said that if a patent has two or more claims, each of value and distinct from the others, one cannot equal all in value, any more than in mathematics a part can equal the whole; and an infringer cannot be decreed to pay for a part as much as a licensee pays for the whole.

It may very well be that it is impossible, in some cases, to prove the profit or advantage due to the invention, and that in some other cases no such advantage exists; but for neither of these reasons [see Elizabeth *vs.* Pavement Company, 97 U. S. 126, Livingston *vs.* Woodworth, 15 How. 559, Black *vs.* Thorne, 111 U. S. 122] should a defendant be mulcted in a substantial sum, whether as profits or damages, or both, based upon speculative deductions from insufficient evidence, that

hardly rise above the dignity of guesses, and resting on unwarranted legal inferences, where the statute gives only "actual" profits and damages, based upon actual legal proof of the facts necessary to establish such profits and damages.

Nor does there arise any legal *presumption* that the sales of either plaintiff or defendant were due to the patented design; or, that if the appellants had not sold the thirty-one pieces of carpet made by them, the appellees would have sold that much more than they did sell. This is, in like manner, *a question of fact* to be *proved.*

In Buerk *vs.* Imhauser, 2 B. & A. 452, the Court said, "If the profits on plaintiff's trunks were no larger than on an ordinary trunk, it would indicate that he suffered no damage capable of being legally estimated. It is true that the defendant may have sold trunks which the plaintiff would have sold if defendant had not infringed, but the damages thereby occasioned cannot be inferred without legal proof." Applying this ruling to the case at bar, it could be stated in this wise: the proofs do not show that the price obtained for the carpet bearing this design, sold by the patentee, was any greater than it would have been without this particular design; nor was any evidence offered to show that the sales of carpet were increased thereby; and these facts go to prove that the addition to, or use of, this design on the carpet did not produce any increased profit to either party over any other carpet of like quality then in the market; nor that the appellants' sales of a different quality of carpet bearing this design caused any "actual" damage to the appellee; certainly none capable of being legally estimated. Such "actual" damage the Court inferred, from the bare statement that the appellee's sales fell off to some extent in the second season, though this might have been due to a previ-

ously satisfied demand, or to different causes with which the appellants' acts did not have the most remote connection; or, as the Court said, in Maier *vs.* Brown, Ib., from the superior business facilities of the appellants to sell carpets in general, or from the mere incidents of trade.

There are other objections to the decree, viz.: the invalidity of the patent, on which the appellees' bill is founded. It may be conceded that the patent is *prima facie* evidence, both of novelty and utility of the design (105 U. S. 94), but, as in the case of patent for mechanical inventions, the specification may disclose want of patentability, on the face of the instrument, in which event the Court will, of its own motion, declare it void, though the issue be not raised on the Record.

Slawson *vs.* Railroad Company, 107 U. S. 649.

It is respectfully contended that this patent is void on its face, for that it claims a mere aggregation of things which are well known ornaments, without any alteration or arrangement making them to differ substantially from those in common use, and of which almost every person possesses a knowledge, and of the existence of which the Court will take judicial notice, as in the case of a mechanical patent. Phillips *vs.* Detroit, 111 U. S. 606, citing Terhune *vs.* Phillips, 99 U. S., 592; Brown *vs.* Piper, 91 U. S., 37, and King *vs.* Gallun, 109 U. S., 99. These things, unless connected with each other, or arranged in some novel manner, so as to produce a new appearance, do not constitute a new design. The specification does not describe any such.

And it would seem, also, in the case of designs, which are called inventions in the statute (and the Court has said, in Northrup *vs.* Adams, 12 O. G., 430, that there must be *inven-*

tion involved in the production of designs) that, as in the case of mechanical inventions, the law would require more than a mere juxtaposition of old figures disconnected in the pattern; in fact a substantially new arrangement producing a new effect on the eye, or a substantial change of form (in case of a patent for a new configuration as distinguished from mere ornamentation); and more than a mere change in the order in which such old and well known figures were placed, and not thereby producing a novel resultant effect. A mere aggregation of old ornaments is not patentable. In Simpson *vs.* Davis, 12 Fed. Rep., 144, which was a case on a design patent, the Court said:

"The claim does not seek to secure the scroll by itself nor the bead by itself, nor the roses by themselves. Each of these is an ornament; but neither of them are new. The claim therefore seeks to cover these forms, associated together in the manner described, as composing a single ornament. In matter of ornament mere juxtaposition of old forms is enough, if thereby a component whole, having a substantially *new effect*, is produced. The *effect* must, to some extent, be *new*. I find it difficult to consider that the scroll, roses, and bead, when arranged as described, constitute a *single* ornament. There is no *commingling of the lines* forming the scroll, roses, and bead; no new idea seems to be embodied in their arrangement. All that has been done is to place there distinct and well-known ornaments, one above the other, without the production of any such combined effect as to entitle the whole to be treated as a new and original ornament. No new ornament has, in fact, been produced. If, therefore, the plaintiffs' action rested on the 5th claim of the patent, I should hesitate to uphold it."

In Western Electric Co. *vs.* Odell, 18 Fed. Rep. 321, the Court approves of Simond's statement of the law (Sim. on Des. Pat.,

p. 212), and also of Wooster *vs.* Crane, 2 Fisher, P. C., 583, and Northrup *vs.* Adams, 2 B. & A., 567. In the latter case the Court said: "The adaptation of old devices or forms to new purposes, however convenient, useful, or beautiful they may be in their new role, is not invention. If a combination of old designs be patentable at all—of which I have some doubt—the combination must be such as to produce a *new appearance.* If the effect produced be simply the aggregation of familiar designs, it would not be patentable."

In above case (18 F. R., 321), which came on for hearing on demurrer to bill, the Court dismissed the bill on the ground that the Court could take notice of what was in common use (following Brown *vs.* Piper, 91 U. S., 37), and hold that the design shown in the patent did not disclose patentable novelty.

The testimony adduced before the Master is of the most meagre character, and wholly insufficient to support any of the conclusions of law or of fact deduced therefrom by the Circuit Judge. The want of proof of gain or profits by defendants, or of *sales* of carpet in case No. 232, or of proof that the appellees either could or would have supplied the demand, or the existence of such demand, or that the appellees could or would have sold to the appellants' customers—these have been already referred to. The entire testimony ~~secured~~ seems to be aimed at proving three things, and failed in all.

1. That there was a falling off in the demand for the carpet, due to the infringement, and the extent of such decrease.

2. The profits which the patentees made on their carpets.

3. The cost of getting up such a design.

The last was not seriously pressed, and was properly rejected both by the Master and the Court. The first was attempted to be proven, by showing a less demand the second season, but no one connected it by any fact with the alleged infringement—one witness admitting that it might be due to different causes; and the extent of the decrease no one attempted to do more than guess at. The second proposition appellees endeavored to prove, by calling two or three witnesses in the trade, to state the cost and market price of such carpets; and they differed so widely that their evidence was unreliable and unsatisfactory, besides which it was wholly irrelevant. The cost and market price of such carpets to others was no measure of what profit the appellees made on such carpets, and which they claim to have lost by the alleged infringement. The only proper proof of these facts, exclusively within their own knowledge, the appellees neglected and refused to produce. Presumably they made no profit on their own carpets of these several designs, otherwise they would certainly have came forward with their books and their officers to prove the cost of their carpets and the price at which they sold them, and so fixed accurately the alleged profit which they claim to have lost, and not left it to conjecture and to be guessed at by carpet weavers and salesmen. But the books they refused, after call, to produce, (in the Hartford case, No. 231) and in the Bigelow cases (Nos. 232 and 233), no officer or manager, or other employee knowing the facts, was called to say a word upon the subject. It is fair to presume that if *appellees* had actually lost any sales of, or made any profit on the carpets of this design sold by *them*, (of which sales and profit they claim to have been deprived), they would have willingly come forward with their books, and indeed been anxious to testify in that behalf of

these things within their own knowledge, to show the actual damages they claim to have sustained. However, in the absence of this, the best and consequently the only admissible evidence on the subject, the Master could not be expected to conjecture either the existence or the extent of such damage.

Upon the whole case, as presented in the record, the decree of the Circuit Court is erroneous, and should be reversed.

HECTOR T. FENTON,
RICHARD P. WHITE,
Counsel for Appellants.

114-629

SUPREME COURT U. S.
FILED
JAN 17 1885
JAMES H. McKENNEY,
CLERK.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

DOBSON

vs.

BIGELOW CARPET CO.

No. 233.

BRIEF FOR APPELLEE.

ARTHUR v. BRIESEN,

Counsel for Appellee.

Evening Post Job Print, 208 Broadway, N. Y.

Supreme Court of the United States,

OCTOBER TERM, 1884.

No. 233.

JOHN DOBSON AND JAMES DOBSON, Trading as John and James Dobson, and also as "The Falls of Schuylkill Carpet Mills,"

Appellants,

vs.

THE BIGELOW CARPET COMPANY.

BRIEF ON BEHALF OF THE APPELLEE.

Statement of Facts.

This suit was brought by the complainant below, the Bigelow Carpet Company, against the appellants, for infringement of a design patent that had been issued to the complainant October 15, 1878 (No. 10,870), for a new design for a carpet.

The bill, which was filed in May, 1879, charges, amongst other things, wilful infringement of the patent, with knowledge thereof, and continued infringement, after notice, requesting defendants to desist, had been given. The defendants failed to answer the bill, and a rule was entered (page 5), taking it *pro confesso*, after which, in

September, 1879, the decree ordering a perpetual injunction, and a reference to a Master was entered. This decree will be found on pages 5 and 6 of the Record.

Proceedings were taken before the Master, in obedience to this decree, the testimony before him being contained on pages 10 to 55 inclusive, of the Record. This testimony consisted, first, of a statement made by the defendant James Dobson, showing that the defendants had made fifty-three pieces, and sold thirty-five pieces of the infringing carpet. James Dobson admits in his examination (page 11) that the carpet made by defendants was like that shown in the patent "Exhibit A," which at the time was before him, and that each of the thirty-five pieces he had sold averaged 55 yards, making in all a sale of 35 x 55 = 1,925 yards. The Court in its final decision, made the mistake of supposing (see bottom page 62), that each piece contained only 50 yards, and therefore gave complainant damages only on 1,750 instead of 1,925 yards. This mistake was probably occasioned by the stipulation referred to in the middle of page 8, to the effect that the *complainant's* carpets had in each piece only about 50 yards.

The testimony which was afterwards taken in New York, is identically the same as that taken in the Hartford Carpet Company's suit, and in the earlier Bigelow Carpet Company's suit Nos. 231 and 232, and need not here be further commented upon, excepting so far, as may be necessary to indicate the points in which the proofs in this suit differ from those in the other suits. The evidence for this suit discloses, amongst other things, the following facts :

FIRST.—That of this pattern of goods, which is termed in the proofs "The Chinese Lantern Pattern," a hundred pieces were sold the first year, after which no further sale could be effectuated. (See Worth's testimony, pages 32 and 34), from which the following is quoted:

Q. 39. How did you seek to overcome the loss occasioned by the loss of the Chinese lantern pattern?

A. There was no use; it just stopped the sale of it.

Q. 40. You stated, I think, that you had some of it left?

A. Yes; we have a few pieces left.

Q. 41. Did you try to sell them?
A. Yes, sir.
Q. 42. Did you succeed?
A. No, sir.
Q. 43. Could not sell them?
A. Could not sell them at all.
Q. 44. Why not?
A. I don't know; because they depreciated by being made in cheaper goods at less price. I don't know what else.

The total inability to sell further goods was wholly attributed by this witness, and also by Mr. James, to the fact that infringing goods at lower rates were in market.

SECOND.—Mr. Worth further shows that from three to four hundred dollars were lost to the complainant by endeavors to fill its looms with other work to take the place of the work on this pattern, which had become unsalable through the infringement (answers 23 and 24, page 33).

THIRD.—The Record shows that Dobson, who, on page 11, swears that of this pattern he sold "none except to our retail store," nevertheless produces on page 15 a statement showing the sale of 31 pieces of this carpet to others, and not to the retail store, showing as a matter of fact that he sold 35 pieces at retail and 31 pieces at wholesale.

But this contradiction between his first assertion and the subsequent record is on a par with the assertion, made by him in his sworn answer in the former suit, No. 232, to the effect that he knows complainant's patent, but knows that he never infringed upon it, when afterwards the absolute line for line infringement had to be admitted. The statement on page 15 also shows that the first infringement came out on the 17th of October, 1878, two days after the issue to the complainant of its patent.

FOURTH.—It is further shown by the witness Holder, upon careful estimates made by him, he being a proper person to make the same, that the patented carpet of complainant costs from $1.06 to $1.10 per yard to produce

(answer 10, page 51), and it is proven by Mr. James, who has special aptitude for knowing the fact, that The Bigelow Carpet Company's patented carpet sold in market at the time of this infringement at the rate of $1.85 per yard (see answers 9 to 11, page 18).

FIFTH.—It also appears that Dobson's goods are inferior to the genuine patented goods; that they are sold at a price below that at which complainant's goods are sold; and that the existence in market of the same pattern in inferior fabric, destroys the sale of the higher priced genuine goods. The testimony on this subject is very full (see James's and Read's depositions, pages 22 to 24, and pages 27 and 28).

SIXTH.—Dobson's deposition tends to show that the defendants' goods were sold without profit.

To these proof no replying testimony was offered, and the defendants allowed the case to go to the Master, upon the evident supposition that the burden of proof had not been shifted by the complainant. The Master, as in the other cases, held with the defendants, namely, that complainant was entitled to nominal damages only, principally because the Master was unable to find the actual decrease of sales of complainant's goods that had been occasioned by the infringement. The Master's report will be found on pages 7 to 10 of the Record. In this report the Master has no excuse, as he had in the Hartford Carpet Company's case, to complain of the non-production of the books, becausee the books of the Bigelow Carpet Company had not been called for.

The exceptions filed to the report, are found on pages 59 and 60, and they coming on to be argued, were sustained by the Court, Judge McKennan finding, as he did in the other cases, the exact counterfeiting of the original, the fact that the infringement commenced after the date of the patent, and that all doubts should be resolved, in view of all the circumstances of the case, against the defendants. The opinion of the Court will be found on pages 61 and 62 of the Record.

The Court finally holds that 1,750 yards of the infringing goods having been sold by the defendants (in fact they sold a great many more yards, as we have shown), and that complainant's profit on the genuine goods being 75 cents per yard, the recovery should be .75x1750, amounting to $1,312.50.

A decree ordering judgment for that amount, with costs, was thereupon entered (page 63), and from that decree this appeal has been taken.

No order was made by the Court below as to the proper disposition to be made of the 19 or 18 pieces of the infringing carpet still in the defendant's hands, though sealed by the marshall. A suggestion by this Court respecting their proper status, would be of great value.

ARGUMENT.

The argument in this case is in every respect the same as in the case between the same appellants, and the Hartford Carpet Company, No. 231, and it is deemed unnecessary to here repeat the same, the Court being requested to consider the same argument as applying to all three cases, Nos. 231, 232 and 233.

Respectfully submitted,

ARTHUR V. BRIESEN,
Of Counsel for Appellee.

NEW YORK, January 12, 1885.

112 -447

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

No. 227.

THE WESTERN ELECTRIC MANUFACTURING COMPANY, APPELLANT,

vs.

THE ANSONIA BRASS AND COPPER COMPANY.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF CONNECTICUT.

FILED JUNE 29, 1882.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1884.

No. 227.

THE WESTERN ELECTRIC MANUFACTURING COMPANY, APPELLANT,

vs.

THE ANSONIA BRASS AND COPPER COMPANY.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF CONNECTICUT.

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1 United States Circuit Court, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING COMPANY
v.
ANSONIA BRASS AND COPPER COMPANY. } In Equity.

The above-named complainant, conceiving itself aggrieved by the final decree entered on the ninth day of January, A. D. 1882, in the above-entitled cause, doth hereby appeal therefrom to the Supreme Court of the United States, and complainant prays that this its appeal may be allowed, and that a transcript of the record, proceedings, and evidence in the cause, duly authenticated, may be sent to the Supreme Court.

GEORGE P. BARTON,
Solicitor for Complainant.

2 United States Circuit Court, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING COMPANY, Appellant,
v.
ANSONIA BRASS AND COPPER COMPANY.

Know all men by these presents, that we, Western Electric Manufacturing Company, a corporation of Chicago, Ills.; Milo G. Kellogg and Enos M. Barton, doing business in the same place, and residing in the town of Hyde Park, in the county of Cook and State of Illinois, are held and firmly bound unto the Ansonia Brass and Copper Company, of Ansonia, in the State of Connecticut, in the sum of two hundred and fifty (250) dollars, to be paid to the said Ansonia Brass and Copper Company, its successors or assigns; to which payment, well and truly to be made, we bind ourselves, and each of us, jointly and severally, and our and each of our heirs, executors, and administrators, firmly by these presents.

3 Sealed with our seals; dated this —— day of March, A. D. 1882.

Whereas the above-named Western Electric Manufacturing Company is about to appeal to the Supreme Court of the United States to reverse the decree entered in the above-entitled cause, on or about the ninth day of January, 1882, by the said circuit court of the United States for the district of Connecticut:

Now, therefore, if the said Western Electric Manufacturing Company shall prosecute its appeal with effect, and, moreover, pay the amount of cost incurred or to be incurred, taxed and to be taxed, in case the decree shall be affirmed, then this obligation shall be void; otherwise, to remain in full force and virtue.

WESTERN ELECTRIC MANUFACTURING CO. [SEAL.]
E. M. BARTON, *Vice-Pres't.*

E. M. BARTON. [SEAL.]
MILO G. KELLOGG. [SEAL.]

STATE OF ILLINOIS, }
County of Cook, } ss:

4 Milo G. Kellogg and Enos M. Barton, being duly sworn, depose and say, and each for himself saith, that he is worth the sum of fifty thousand dollars over and above all his just debts and liabilities.

E. M. BARTON. [SEAL.]
MILO G. KELLOGG.

Signed and sworn to before me, this 10th day of March, 1882.
[SEAL.] WILLIAM S. GRANGER,
Notary Public.

UNITED STATES OF AMERICA,
DISTRICT OF CONNECTICUT, *March* 13, 1882.

The within and foregoing bond is approved and the appeal allowed.

N. SHIPMAN,
District Judge.

5 The circuit court of the United States of America for the District of Connecticut to the Ansonia Brass and Copper Co.

Whereas The Western Electric Manufacturing Company has lately appealed to the Supreme Court of the United from a decree lately rendered in the circuit court of the United States for the district of Connecticut, made in favor of you, the said Ansonia Brass and Copper Company, and has filed the security required by law, you are, therefore, hereby cited to appear before the said Supreme Court, at the city of Washington, on the second Monday of October next, to do and receive what may appertain to justice to be done in the premises.

Given under my hand, at the city of Hartford, in the district of Connecticut, in the second circuit, the thirteenth day of March, in the year of our Lord one thousand eight hundred and eighty-two.

N. SHIPMAN,
District Judge, and one of the Judges of the Circuit Court for the District of Connecticut.

5½ BIRMINGHAM, CT., *March 22d*, 1882.

Due and legal service of the within citation is hereby acknowledged.

THE ANSONIA BRASS AND COPPER CO.,
By WOOSTER & TERRANCE,
Of Counsel for Defendants.

6 WESTERN ELECTRIC MANUFACTURING COMPANY } In Equity.
v.
ANSONIA BRASS AND COPPER COMPANY. }

Be it remembered that on the 5th day of April, 1880, there was filed in court a bill in equity, in the words and figures following, viz:

7 *Bill of Complaint.*

Circuit Court of the United States, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING CO.
vs.
ANSONIA BRASS AND COPPER CO. } In Equity.

To the honorable the judges of the circuit court of the United States for the second circuit, within and for the district of Connecticut, in equity:

1st. Western Electric Manufacturing Company, a corporation organized under the general laws of the State of Illinois, and having its principal office for doing business at No. 220 Kinzie street, in the city of Chicago, Cook county, Illinois, brings this its bill against the Ansonia Brass and Copper Company, a joint stock company, organized under the general manufacturing laws of the State of Connecticut, and doing business at Ansonia, in the county of New Haven, and State of Connecticut.

2d. And thereupon your orator complains and says, upon information and belief, that heretofore, and before the 23d day of July, A. D. 1872, Joseph Olmsted, of the city and county of Providence, in the State of Rhode Island, and being then a citizen of the United States, was the true, original, and first inventor or discoverer of a certain new and useful "Improvement in Insulating Telegraph Wire," described in letters patent of the United States
8 dated July 23d, 1872, and numbered 129,858, hereinafter mentioned, which was not known or used by others prior to his invention thereof, and which was not and had not been, at the time of his application for said letters patent, in public use or on sale in this country for more than two years before his said application, contrary to the provisions of the statutes of the United States in such case made and provided.

3. And your orator further shows unto your honors, upon like information and belief, that, being such inventor, the said Joseph Olmsted made due application in writing to the Commissioner of Patents of the United States for the granting of letters patent for said invention, and also complied in all other respects with all the necessary conditions and requirements of the statutes of the United States in such case made and provided, prior to the granting of the letters patent hereinafter mentioned.

4. And your orator further shows unto your honors, upon information and belief, that on the 23d day of July, 1872, letters patent of the United States, bearing date on that day, were issued to the said Joseph Olmstead, according to law, whereby there was granted to him, his heirs or assigns, for the term of seventeen years, from the 23d day of July, one thousand eight hundred and seventy-two, the full and exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof, as described and claimed in said letters patent, which said letters patent are now remaining of record in the Patent Office of the United States.

5. And your orator further shows unto your honors, upon like information and belief, that the said Joseph Olmsted, having, for good and lawful cause, surrendered said letters patent to the Commissioner of Patents, and having applied for the reissue thereof, according to law, said original letters patent were cancelled; and your orator, having acquired by mesne assignment all right, title, and interest in and to the said invention and improvement, and all letters patent granted, or to be granted therefor: New letters patent upon amended specifications, marked "Division A" and "Division B," were granted to your orator as such assignee of the said Joseph Olmsted; said new letters patent being issued in two parts
9 and numbered and marked No. 6954 reissue, and 6955 reissue, respectively, and dated the twenty-ninth day of February, one thousand eight hundred and seventy-six, were signed by Z. Chandler, Secretary of the Interior, sealed with the seal of the United States Patent Office, and countersigned by R. H. Duell, Commissioner of Patents, and delivered to your orator, whereby was granted unto your orator the said Western Electric Manufacturing Company, its successors or assigns, for the term of seventeen years, from the 23d day of July, one thousand eight hundred and seventy-two, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof, as described and claimed in said several reissued letters patent, which last-mentioned reissued letters patent are of record in the Patent Office of the United States, and which, or duly authenticated copies thereof, are here in court, ready to be produced.

6. And your orator further shows unto your honors that ever since the date of said reissued letters patent your orator has been and now is entitled to the exclusive use of the said invention or improvement therein described and claimed.

7. And your orator further shows unto your honors that the invention or improvement secured to your orator as aforesaid is of very great utility, and that the same has been extensively introduced into public use, and that the public have generally acquiesced in your orator's exclusive right to the same, and your orator would, but for the wrongful acts of the said defendant and others acting in concert with it, have secured large gains, profits and advantages from the manufacture, use, and sale of the said invention, and would now be enabled to use the said invention to which it is entitled to the exclusive right as aforesaid, with profit and advantage, but that by the said wrongful acts it is now prevented and hindered from so doing.

8. And your orator further shows unto your honors, that the said defendant, well knowing the rights and privileges secured unto your orator as aforesaid, and in order to deprive your orator of the profits, benefits and advantages which might and otherwise would have accrued unto your orator at Ansonia, and within the said district of Connecticut, and at other places within the United States, and
10 without license and permission of your orator, the said defendant has, since the 29th day of February, 1876, and prior to the commencement of this suit, manufactured large quantities of insulated

telegraph wire, according to the method or process patented unto your orator by the aforesaid reissue No. 6954, and that thereby the said defendant has produced insulated telegraph wire, the fibrous covering of which has its pores filled with wax, and its surface polished substantially as described, claimed and patented unto your orator by the aforesaid reissue No. 6955, and that the said defendant is threatening to make the aforesaid insulated telegraph wire in still larger quantities, and to supply the market therewith, and to sell the same, and that the said defendant did sell the same much below the regular market price therefor established by your orator, and is threatening to sell the same still lower, and that the said defendant has, since the 29th day of February, 1876, unlawfully and wrongfully made, or caused to be made, sold, or caused to be sold, the aforesaid improvement in insulating telegraph wires, as described and claimed, and patented unto your orator by the said several reissued letters patent, and thereby defendant has infringed, and still infringes, upon the exclusive rights and privileges secured unto your orator as aforesaid, to your orator's great and irreparable loss and injury, and by which your orator has been and still is being deprived of great gains and profits which your orator might and otherwise would have obtained, but which have been received and enjoyed, and are being received and enjoyed, by the said defendant through its aforesaid unlawful acts and doings.

9. And your orators further show unto your honors, upon information and belief, that the said defendant has a large quantity of said insulated telegraph wire on hand, which it is unlawfully and wrongfully offering to the trade, and that it is receiving large profits and advantages therefrom, and that the aforesaid unlawful acts and doings have the effect to and do encourage others to infringe upon the aforesaid exclusive rights secured unto your orator as aforesaid.

10. To the end therefore that the defendant may, if it can, show cause why your orator shall not have the relief herein prayed, and may, but not upon oath, and oath being hereby waived, to the
11 utmost of the defendant's knowledge, remembrance, information, or belief, full, true, and perfect answer make to all and singular the premises, and that defendant may be decreed to account for and pay over to your orator all gains and profits realized by it from the unlawful making, using, or selling of the improvements vested in your orator as aforesaid, and that your orator may recover, in addition thereto, the sum of ten thousand dollars damages, which your orator has sustained thereby, and that the said defendant, its officers, agents, and attorneys, may be perpetually enjoined by an injunction to be issued out of this honorable court from making, using, or selling to others insulated telegraph wire containing the aforesaid improvement, and that your orator may have such other and further relief as equity may require, and to your honors seem meet:

May it please your honors to grant unto your orator a preliminary or temporary injunction, to be issued out of this honorable court, enjoining the said defendant, its agents, attorneys, employees, or servants from making, using, or selling insulated telegraph wire

containing the invention or improvement secured to your orator as aforesaid, during the pending of this suit.

May it please your honors to grant not only a writ of injunction conformable to the prayer of this bill, but also a writ of subpœna, directed to the said Ansonia Brass and Copper Company, defendant, commanding it, at a certain time, and under a certain penalty, to appear before your honors in this court, and then and there to answer unto this bill of complaint, and abide by such order and decree herein as to this court may seem required by the principles of equity and good conscience.

WESTERN ELECTRIC MANUFACTURING CO.,
By BARTON & DEWOLF, *Attorneys.*

BARTON & DEWOLF,
Solicitors, and of Counsel for Complainants.
GEORGE P. BARTON,
Of Counsel.

12 UNITED STATES OF AMERICA, }
Northern District of Illinois, } *ss:*

On this 3d day of July, A. D. 1880, before me personally came the subscriber, Milo W. Kellogg, who, being duly sworn, on oath says that he is superintendent of the Western Electric Manufacturing Company, complainant, and authorized to make this affidavit; that he has read the foregoing bill of complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters and things which are stated therein upon information and belief, and as to those matters and things he believes it to be true.

MILO G. KELLOGG.

Sworn to and subscribed before me July 3d, 1880.
[SEAL.] ARTHUR F. TOWNE,
Notary Public.

And on the same day a writ of subpœna issued out of court, directed to the said defendant, which was duly served and returned, and which, with the return of service endorsed thereon, is in the following words, viz:

13 [L. S.] The President of the United States of America to the marshal of the district of Connecticut, sendeth greeting:

You are hereby commanded to summon The Ansonia Brass and Copper Company, a joint stock company, organized under the general manufacturing laws of the State of Connecticut, and doing business at Ansonia, in the county of New Haven, State of Connecticut, to appear before the judges of the circuit court of the United States of America for the district of Connecticut, in the second circuit, in equity, on the first Monday of August, 1880, wheresoever the said court shall then be, to answer a bill of complaint exhibited against said Ansonia Brass & Copper Company in said court by the Western

Electric Manufacturing Company, a corporation organized under the general laws of the State of Illinois, and having its principal office for doing business at No. 260 Kinzie street, in the city of Chicago, Cook county, Illinois, and then and there to answer the same, and to do and abide by what said court may order and decide in the premises.

Make due service and return at least twenty days before said first Monday of August, 1880.

Witness the Hon. Morrison R. Waite, Chief Justice of the Supreme Court of the United States, at Hartford, this 5th day of July, A. D. 1880.

E. E. MARVIN, *Clerk.*

The defendant is required to enter its appearance in said cause in the clerk's office of said court on or before the day at which this writ is returnable, or, by the rules of said court, said bill will be taken as confessed.

E. E. MARVIN, *Clerk.*

BARTON & DEWOLF,
182 *Dearborn St., Chicago, Illinois, Complainant's Solicitor-.*

UNITED STATES OF AMERICA.

13½ DISTRICT OF CONNECTICUT, } ss:
New Haven County, }

ANSONIA, *July* 7, 1880.

Then and there I served the within writ on The Ansonia Brass & Copper Company, the corporation herein named, by delivering to and leaving with Delia Griffin, at the usual place of abode of Geo. P. Cowles (I being directed by E. E. Marvin, clerk of the U. S. courts, to serve a copy on said Cowles), a true and attested copy hereof.

Attest: JOS. D. BATES,
U. S. Marshal.

Fees:

Service	2 00
Copy	1 00
Travel	6 24
Hack	50
	9 74

14 And on the same day Messrs. Barton and DeWolf entered their appearance for the complainant, and on the 19th day of July, 1880, Messrs. Wooster and Torrance entered their appearance for the defendant; and on the 6th day of September, 1880, defendant's answer was filed, in the words and figures following, viz:

15 *Defendant's Answer.*

United States Circuit Court, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING CO.
vs.
THE ANSONIA BRASS AND COPPER CO. } In Equity.

The said defendant, now and at all times saving and reserving to itself any and all manner of benefit and advantage of exception that can or may be had or taken to the many errors, uncertainties or imperfections in said bill of complaint contained, for answer thereto, or to so much or such parts thereof as said defendant is advised is material for the defendant to make answer unto, answers and says:

1st. This defendant, on information and belief alone, admits that letters patent of the United States were, on or about the 23d day of July, A. D. 1872, issued to Joseph Olmsted, named in said bill, for an alleged "Improvement in Insulating Telegraph Wire," but whether the same were applied for as in said bill set forth the defendant does not know, and is not informed, save by said bill, and leaves the complainant to make proof thereof as the complainant may be advised is material.

2d. And the defendant further says that it does not know, and is not informed, save by said bill, whether or not the complainant became by assignment the sole and exclusive owner of said letters patent, and leaves the complainant to make such proof thereof as the complainant may be advised is material.

3d. The defendant, on information and belief alone, admits that letters patent were reissued to the complainant, bearing date the 29th day of February, one thousand eight hundred and seventy-six, in two parts, as averred in said bill, but the defendant denies that the surrender of said original letters patent for that purpose was made for the causes stated in said bill, or for any good and lawful cause whatever; on the contrary, the defendant avers that said surrender was made, and said reissue obtained, for the purpose of including new matter, and inventions and improvements not described, claimed, or contained in said original letters patent, or in any part thereof, and that said reissued letters patent do, in fact, contain new matter, and claim inventions and improvements not described, claimed, or contained in said original letters patent, and are not for the same alleged invention for which said original letters patent were issued, and are, therefore, void and of no legal effect.

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4th. The defendant, further answering, says that it admits that it is engaged in the manufacture and sale of telegraph wire, covered by braiding over the wire a fibrous covering, after which it is dipped in a preparation for the purpose of filling and closing the pores; after which the same is sand-papered and rubbed and passed through revolving dies, for the purpose of scraping off the surplus material and consolidating and smoothening the surface of said remaining covering; but the defendant denies that, in so doing, it in any way

infringes upon any rights secured to the complainant by the letters patent issued to the complainant, as aforesaid, upon any proper construction of the same, and the defendant denies that it has infringed upon any just right of the complainant in any other manner.

5th. The defendant, further answering, says that the said Joseph Olmstead was not the first and original inventor of any such improvement, or of any substantial or material part thereof, or that the same was patentable or the subject-matter of invention; and further avers that before the said invention alleged therein, and prior to the alleged invention or discovery thereof, and therefore said letters patent are void and of no effect in law; and the defendant will prove that prior knowledge and use of said alleged invention was had by the following named persons, at the places mentioned, and that said alleged invention had been patented or described, as aforesaid, by the persons hereinafter named as patentees, or in the hereinafter specified patents and in the printed pub-
17 lications hereinafter mentioned, and in the following letters patent, numbered and described as hereinafter specified, namely:

To George W. Cheeseman, of Derby, Connecticut, at Ansonia, in said Derby.

To Robert N. Bassett, of Derby, Connecticut, at Birmingham, in said Derby.

To M. W. Goodyear, of New York city, at Chicago, State of Illinois.

To Eugene Phillips, of Providence, Rhode Island, and Thomas L. Read and Walter Carr, of said Providence, at said Providence.

To F. H. Thompson, of said Derby, at Philadelphia, in the State of Pennsylvania.

To Alfred F. Moore, of said Philadelphia, at said Philadelphia.

To S. Bishop, of New York city, at said city of New York.

And described in the following letters patent:

Letters patent of Great Britain, granted to Thomas Goulster Ghisler, dated April 28th, 1864, and numbered 1072.

Letters patent of Great Britain, granted to Felix M. Baudouin, dated April 3d, 1857, and numbered 933.

Letters patent of Great Britain, granted to Thomas Earl, of Dundonald, dated July 22d, 1851, and numbered 13698.

Letters patent of Great Britain, granted to Charles Hancock and Stephen William Silver, dated December 12th, 1862, and numbered 3331.

Letters patent of Great Britain, granted to Joseph Latimer Clark, dated December 20th, 1853, and numbered 2956.

6th. The defendant, further answering, says that it has no knowledge, save by said bill, that the complainants have made large gains and profits, or could have made gains and profits but for the acts of the defendants; and the defendants deny that the public have acquiesced in the alleged exclusive rights of the complainants, as averred in said bill, and leave the complainants to make such proof as they may be advised is material.

18 7th. The defendant, further answering, says that it has

made insulated telegraph wire, and intends still to do so, and to sell the same, but the defendant denies that it has ever made or sold the same for the purpose of interfering with the just rights of the complainant; that it has not fixed or established the price of said telegraph wire below the price of complainant's wire for the purpose as averred in said bill of complaint, but has sold the same at a just and reasonable price, and will continue so to do and to supply the demand of the public to the best of its ability.

8th. And the defendant, further answering, says that the complainant has not suffered and is not suffering any damage or loss by reason of any unlawful acts of the defendant, and this defendant denies that the complainant is entitled to any relief in the premises, and the defendant prays to be hence dismissed, with its reasonable costs and charges in this behalf most wrongfully sustained.

THE ANSONIA BRASS AND COPPER CO.,
By A. A. COWLES, *Secretary.*,
WOOSTER & TORRANCE,
Solicitors, and of Counsel for Defendant, Birmingham, Conn.

STATE OF CONNECTICUT, } ss.
New Haven County, } DERBY, *September* 4th, 1880.

Personally appeared Alfred A. Cowles, secretary of the Ansonia Brass and Copper Company, who made oath that he has read the foregoing answer and knows the contents thereof, and that the same is true, except as to those matters stated to be on information and belief, and as to those he believes them to be true.

Before me—
[SEAL.] DAVID TORRANCE,
Notary Public.

18½ And on the 24th day of September, 1880, complainant's replication to answer of defendant was filed in the words and figures following, viz:

19 United States Circuit Court, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING COMPANY } In Equity.
vs.
ANSONIA BRASS AND COPPER COMPANY.

The replication of the above-named complainant to the answer of the above-named defendant.

This repliant, saving and reserving to itself, now and at all times hereafter, all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiencies of said answer, for replication thereunto, says: That it will aver, maintain, and prove its bill of complaint to be true, certain, and sufficient in law to be answered unto, and that the said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by this repliant, without this, that any other matter or thing whatsoever in

the said answer contained material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently
20 replied unto, confessed, and avoided, traversed, or denied, is true, all of which matters and things this repliant is and will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly prays as in and by its said bill it has already prayed.

BARTON & DEWOLF,
Compl'ts Sol'rs.

20½ And on the 12th day of December, 1881, complainant's evidence was filed, in the words and figures following, to wit:

21 *Evidence for Complainant.*

United States Circuit Court, District of Connecticut.

THE WESTERN ELECTRIC MANUFACTURING CO. *vs.* THE ANSONIA BRASS AND COPPER CO. } In Equity.

NEW YORK, *Nov.* 16, 1880.

Parties present by their respective counsel; George P. Barton appearing for plaintiff, and Wm. B. Wooster for defendants.

Printing of replication waived by counsel.

JOSEPH E. PUTNAM, produced as a witness on behalf of complainant and duly sworn.

By Mr. BARTON:

1st Int. Please state your name, age, residence and occupation?

A. Joseph E. Putnam; age, 20; residence, Rochester, N. Y.; occupation, student.

2d Int. In what business were you engaged in May last?

A. I was employed in the Western Electric Manufacturing Company as expert.

3d Int. Please look upon the wire now shown you, consisting of a spool of blue wire and a coil of red and white wire, and state when you first saw the same.

A. I first saw the same in Cliff street, New York city, at the store of the Ansonia Brass Company.

4th Int. Look upon the paper now shown you and state what it is, and how it came into your possession?

A. It is a bill for the wire spoken of, and was given me by the salesman who sold me the wire.

Complainant's counsel here offers in evidence the said wire and paper, and the same are marked:

2 Complainant's Exhibit Blue Wire. W. J. M., Nov. 16th, 1880.

Complainant's Exhibit Red and White Wire. W. J. M., Nov. 16th, 1880.

Complainant's Exhibit Bill of Ansonia Brass and Copper Co. W. J. M., Nov. 16th, 1880.

The following is a copy of complainant's Exhibit Bill of Ansonia Brass and Copper Co. W. J. M., Nov. 16th, 1880:

No. 19 CLIFF STREET, NEW YORK, *May* 14, 1880.

M			
Office wire	$6\frac{8}{16}$		
Annunciator wire	$6\frac{15}{16}$		
	$13\frac{7}{16}$	@ 40c.	5 37

Paid. ANSONIA BRASS AND COPPER CO.
J. KIMARE.

5th Int. Was the wire bought the same day that the bill is dated?
A. Yes, sir.
6th Int. Who paid for it?
A. I did.

Cross-examination by Mr. WOOSTER waived.

Nov. 16th, 1880. JOSEPH E. PUTNAM.

Attest:
WILLIAM J. MANN, *Examiner.*

Evidence of Frank L. Pope.

FRANK L. POPE, produced as a witness on behalf of complainant and duly sworn.

By Mr. WOOSTER:

The defendant, for the purpose of saving time, admits that both paraffine and wax are used as component parts of the material used for insulating wire manufactured by them.

By Mr. BARTON:

1st Int. Please state your name, age, residence, and occupation.
A. Frank L. Pope; age, 39; residence, Elizabeth, N. J.; office at 32 Park Place, New York city; occupation, expert in patent cases and solicitor of patents.

23 2d Int. What experience, if any, have you had in matters relating to electricity and telegraphy, either practically or as an expert, in patent cases or otherwise?
A. I entered the service of the American Telegraph Company as an operator and station manager in 1857. In 1862 I was appointed assistant engineer of that company, which position I occupied three or four years, during which time my duties consisted principally in superintending the construction of telegraph lines for the company, and in fitting up and connecting the instruments in the new stations that were opened, and other work of the same character. In 1867 I

superintended the erection of the wires and instruments of the Stock and Gold Reporting Telegraph in New York city, the first system of the kind ever organized, and which was ultimately merged in the present Gold and Stock Telegraph Company. In 1870 I organized a system of private telegraph lines in New York city, operated upon the same general plan, and attended personally to all the construction and fitting up of the entire system. This system was afterwards purchased by the Gold and Stock Telegraph Company before mentioned, and has since been continued as the private line department of that company. After the purchase of the latter system I was frequently employed by the Gold and Stock Company as an expert and solicitor of patents until 1875, when I took charge of a patent department which was jointly established by the Gold and Stock and Western Union Telegraph Companies for the examination of patents relating to electricity and telegraphy, and such general work in connection with patents as might be required by the exigencies of the service. I resigned this position in May of the present year, in order to enter into a similar business on my own account.

3d Int. Are you familiar with the methods usually employed prior to July, 1872, for insulating metallic conductors?

A. I believe that I am familiar with all the methods that were to any extent in use prior to the date referred to in the question. This familiarity necessarily arose from the character of my duties for ten years previous to that date.

4th Int. What were the methods then in general use?

A. When I entered the telegraph service, in 1857, the copper conductors were usually insulated by one or more coatings of
24 gutta percha or India rubber, or else by winding them spirally with threads of fibrous material, the coating thus formed being frequently painted with ordinary oil paint, and, in some instances, coated with shellac. The next improvement, which I think came into use about 1860, consisted in giving the conductor a thin, continuous coating of gutta percha, and in braiding a thin fibrous coating over this, which latter was sometimes covered with a coat of shellac. Soon after it became usual to omit the gutta percha coating and to braid the fibrous material directly upon the wire; this method was used almost exclusively in the telegraph service until about 1868. While engaged in the construction of the lines of the Gold Reporting Telegraph, during that year, I experienced a great deal myself with different varieties of insulated wire in trying to discover something that would answer when used under the peculiar conditions which were called upon to meet. We were frequently obliged to run a group of wires inside a metallic pipe, with numerous curves and angles extending from top to bottom of a high building. In the winter time water would collect in these curves and angles in consequence of the condensation of moist air, and from an electric connection between the different wires in the pipe. When gutta percha or rubber-coated wires were used, exposed as they necessarily were to alternate periods of wetness and dryness, the coating would invariably crack at the place where the wires were bent after a few months

of use. After a good deal of experimenting we finally adopted the method of first coating the wire with two coats of fibrous material, the first laid longitudinally and the second spirally, and then immersing the wire thus coated in a bath of melted paraffine. I think I was the first to use this wire, during the winter of 1868–9, but its use soon became general in the telegraphic service throughout the country. It served a very good purpose, although not by any means perfect, as there was always a perceptible leakage of electricity through the paraffined coating, after the wire had been immersed in water for a few hours. In most cases, however, this leakage was not sufficient to prevent the use of the wires for our business. I made some investigations for the purpose of ascertaining the precise cause of this leakage, or escape, as it is technically termed, and came to the conclusion that it arose from the shrinkage of the paraffine in the interstices of the fibres of the material, which takes place, as is well known, while the melted paraffine is in the act of solidifying by cooling. I consider it possible that minute openings were thus made between the paraffine and the fibre through which the water ultimately found its way. I believe this method of covering wire and insulating it continued in general use up to about the time mentioned in question 3, the only difference being that it was more usual to put on the fibrous material in one braided coating than in the manner which I have previously described as being used by myself.

5th Int. Please state briefly whether any improvements in the art of insulating telegraph wire have been brought to your attention since that time; and, if so, what they are.

A. The only improvements which have been made since that date, of which I have any special knowledge, is that of finishing and polishing the coated wire in such a manner as to make the coating uniformly cylindrical, and to compress the paraffine or other similar waxy material so as to force it more completely into the interstices of the fibres, which has the effect of improving the insulation of the coating, of giving it a better appearance, and of rendering it more convenient to string through blocks in the ordinary method of attaching such wires to walls and ceilings.

6th Int. Please look upon the spool and coil of wire now shown you, being respectively marked Complainants' Ex. Blue Wire, W. J. M., Nov. 16th, 1880, and Complainants' Ex. Red and White Wire, W. J. M., Nov. 16, 1880, and give your opinion as to the method or process by which the said wire was coated or insulated, and give your reasons at length for the opinion you may express.

A. The wire in both these exhibits has been coated with fibrous material, which has been put on by different methods. The blue wire has two spiral coatings, one outside of the other, one being laid on with a right-hand and the other with a left-hand twist. The coating of the red and white wire has been put on by a braiding machine. The subsequent manipulation of both the wires has apparently been the same, and my opinion is that the wire, after having been thus coated with fibrous material, has been immersed in a bath of liquid paraffine, wax, or other similar

material, and that after this material has more or less solidified
26 the wire has been passed through a cylindrical die whose diameter is somewhat less than that of the wire with its coating as it left the coating machine, which has rendered it very nearly uniform in diameter throughout its length and truly cylindrical in form, and has compressed the wax or other like material while in a solid state—or, more properly, a somewhat plastic state—into the interstices of the fibrous material. I have examined the coating in both the exhibits with a magnifying glass, and I find the surface of the coating very smooth and uniform, and having the loose fibres, which ordinarily project in various directions from the surface, laid, for the most part, parallel to each other and pressed into the wax, thus proving that the coated wire has been subjected to some process similar to that of being passed through a die. An ordinary braided coating, as it comes from the machine, varies in its thickness, at different points, to an extent perceptible to the eye, and still more perceptible by careful measurement. The diameter being practically uniform in the exhibits shows that the diameter of the die must have been somewhat less than the average diameter of the coating as it originally came from the covering machine. The polished appearance of the surface shows that this operation must have been performed after the wax had become solidified.

7th Int. Please look upon the letters patent now shown you, being reissues No. 6954 and No. 6955, respectively, for improvement in insulating telegraph wires, granted to the Western Electric Manufacturing Co., of Chicago, Ill., the 29th day of February, 1876, as the assignee of Joseph Olmstead, of Providence, R. I., and state whether you have examined and understand the same, and distinguish the former, the specification of which is marked Division A, from the latter, the specification of which is marked Division B.

A. I have read the specifications and claim of each of the said reissued patents and believe that I understand them. The subject-matter of the patent designated as Division A I understand to be an art or process of insulating telegraph wire, which consists of three steps: first, placing a fibrous cover on the wire; second, filling
27 the pores of the cover with paraffine or wax as an insulating material; and, third, compressing the covering and polishing its surface. The subject-matter of the patent designated as Division B I understand to be an article of manufacture, being an insulated telegraph wire, the covering of which has its pores filled and its surface polished, being the product which results from the use of the process of Division A.

8th Int. What can you say as to the similarities or differences between the method or the process described by you in answer to question 6, and that claimed in patent 6954, Division A?

A. In my opinion they are substantially the same.

9th Int. What can you say as to the similarities or differences between the wire marked Complainants' Ex. Blue Wire and Complainants' Ex. Red and White Wire and the article of manufacture or product claimed in reissue 6955, Division B?

A. In my opinion the wire in each of the said exhibits possesses

all the essential characteristics of the article of manufacture set forth in the claim of the patent, and is, in fact, substantially the thing so claimed.

10th Int. Please state your opinion as to the similarities or differences between the method described by the defendant in its answer as follows: "It admits that it is engaged in the manufacture and sale of telegraph wire covered by braiding over the wire a fibrous covering, after which it is dipped in a preparation for the purpose of filling and closing of the pores, after which the same is sand-papered and rubbed and passed through revolving dies for the purpose of scraping off the surplus material and consolidating and smoothening the surface of said remaining covering" and the method or process described or claimed in reissue No. 6954, Division A?

A. The first step of the process, that of coating the wire with fibrous material, is precisely of the same; as to the next step, the description quoted does not state what the material is into which the covered wire is dipped, but my inference is, from the nature of the subsequent steps in the process as they are given, and the results that are stated to be produced thereby, that the preparation so called must possess the characteristics of paraffine or wax; the pur-
28 pose served by it, that of filling and closing the pores of the fibrous material, is precisely the same; the next step, that of sand-papering and rubbing the coated wire is an additional one, not referred to in the patent; its office apparently is to remove surplus material, and, to a certain extent, to smooth the surface; the effect of this step upon the finished product would probably not be perceptible, except in it so far as a less quantity of insulating material would be found upon the wire; the final step of the process in each case appears to have the same object and result, as it is obvious that consolidating the surface necessarily involves the compressing of it, and that smoothening the surface is the same thing as polishing it, the difference, if any, is merely one of degree, and not of kind.

THURSDAY, *Nov.* 18*th*, 1880.

Parties present by their respective counsel.

Complainant's counsel here offers in evidence said reissued patents, to be respectively marked Complainant's Ex. Process Patent and Complainant's Exhibit Product Patent, W. J. M., Nov. 18th, 1880, and they are so marked.

Cross-examination by Mr. WOOSTER:

11th Int. In answer to the direct interrogatory seventh you specify three steps or acts. Do you understand the specification in the process patent to include any mode or process of putting the covering of fibrous material on the wire?

A. I so understand it.

12th Int. What mode or process do you understand the specification to point out, and by what language do you understand the specification to describe the mode of covering?

A. The only mode of covering specifically pointed out in the specification is that of braiding the covering on the wire; but I understand that the specification having pointed out one well-known method of covering the wire, its construction is not necessarily confined to that one method to the exclusion of other equally well-known methods which might be used by a person skilled in
29 the art, at his discretion, whereby precisely the same result would be arrived at at the completion of the whole process. No method other than that of braiding is specifically mentioned in the specification.

13th Int. You allude, do you not, to the recital of certain well-known methods of covering wire, and not to any specification of the method described by the patentee?

A. I do.

14th Int. Do you understand the claim to include wire braided or wire covered in any form?

A. I understand it to include wire covered with a coating of a fibrous material, put on by any of the known processes.

15th Int. In answer to interrogatory seven you say the second step is filling with paraffine or wax. Do you understand the claim to confine the patentee to either or both of these substances?

A. I do not construe it as necessarily confined to either or both of these substances, but to include their known and proper equivalents, by the use of which the same result would be attained.

16th Int. By the same results do you mean equal results in efficiency, or do you mean any substance by which any degree of insulation may be obtained?

A. I mean any substance which is a more or less perfect insulator, which is capable of being forced into the pores of the fibrous covering by compression, and is therefore more or less plastic, and which is capable of receiving and retaining a smooth and polished surface by means of pressure thereupon.

17th Int. Would common starch, if made plastic, be such a substance?

A. I am not sufficiently acquainted with the characteristics of starch to express a positive opinion in reply to the question. I suppose starch to be an insulating material, but do not know it to be such.

18th Int. Would wheat flour, wet so as to form a plastic substance, be such an article as would be included under the claim?

A. I should say not, for the reason that by the term insulating material, as applied to the coating of wires, a substance which is water-proof or impervious to water is understood. Water, in one form or another, is the principal obstacle in the way of securing insulation for wires.

30 19th Int. Do you understand by the term insulating it must necessarily mean a substance impervious to water?

A. In a general sense, yes. But insulation is rather a relative than an absolute matter; the more impervious to water a substance is, provided it is itself a non-conductor, the better it serves its pur-

pose as an insulator. Speaking in a practical sense, an insulating material is one which is impervious to water.

20th Int. Do you understand the claim to include the covering, compressing and polishing wire, whether round, or flat, or square?

A. I do not understand that the shape of the wire makes any difference, so long as it is capable of being treated by the process described with a similar result.

21st Int. Do you understand the claim to cover any particular mode of compressing the covering of wire, and thereby polishing it, or does it include every mode by which compressing and polishing can be obtained on a plastic or insulating material?

(Question objected to, as indefinite.)

A. I construe it to include any mode of compressing the covering, as compressing is a certain well-known process, and the specification has pointed out one means of effecting the compression which will produce the result aimed at. It is not necessary to undertake to point out all the different methods that might be used.

22d Int. Does the claim include wire covered by the material you have named, if the surface is not polished?

A. In my opinion it does, if the covering has been compressed as described in the specification. The principal object of the process is, I understand, to be to improve the insulation of the wire, and this is effected by the compression. The polishing of the surface is incidental to the compression described, but it aids to some extent in securing good insulation, as the polished surface retains less moisture after having been wet than does a surface which is less smooth.

23d Int. If a wire, after covering with fibrous material and filling with wax, paraffine, or other plastic substance, which you include under the claim, were drawn through a person's hand closed,
31 so as to compress the wire and thereby smoothen the insulating substance on the wire, would that process be included under the claim, as you construe it?

A. I should say not.

24th Int. Give your reason why not.

A. The specification of this patent, before describing the improved process which forms its subject-matter, sets forth the objection to the method previously in use, viz., that it leaves the covering in a very rough and soft condition, and fails to secure perfect insulation. I infer from this that the improved process is designed to smoothen and harden the covering, and thereby improve the insulation; therefore, I understand the term suitable machine, by a fair construction, to mean an instrumentality which presents a hard and smooth surface to the coating of the wire during the operation, which a person's hand would not be.

25th Int. If in the hand were held a metallic or wooden die, through which the wire was drawn, and this imparted to the covering a polished surface and it compressed the plastic substance into the fibrous covering, would this process, as you construe the claim, be covered by it?

A. I think it would be substantially the same as the final step of the process claimed.

26th Int. If within the hand you held any substance of sufficient solidity to compress the plastic material, and thereby polish, and such substance was by the hands compressed around the wire and the wire drawn through, would or not that be within the claim, as you understand it?

(Objected to, as indefinite.)

A. The meaning of the question is not quite clear to me. The term sufficient solidity does not convey a clear impression to my mind as to the physical characteristics of the substance intended.

27th Int. Question twenty-six is repeated, with this addition—the substance to be held in the hand shall be harder than the plastic substance on the wire, and shall be so hard as not to yield such plastic substance, and shall be so smooth as to polish when the wire is drawn through the hand and between the substance compressed around the wire?

32 (Objected to, as indefinite, and as a repetition of question twenty-five, so far as its meaning is apparent.)

A. I am of the opinion that this operation would also be substantially the same as the final step of the process claimed.

28th Int. What do you understand as the invention or discovery of the patentee in the process patent?

A. I consider the invention to consist in an improved art, method, or process of placing an insulating envelope upon a telegraph wire, which is more perfect in its insulating properties, of better appearance, and in more convenient form for use; which process consists in three separate and successive operations, which form the several steps of the process—first, coating the wire with fibrous material; second, dipping the coated wire in insulating material in a liquid condition; and, third, in compressing the coating thus formed, while in a hardened but still plastic state, so as to consolidate the insulating material and force it into the interstices of the fibrous material, and to close up any openings which may have existed in the insulating material, and, as an incidental but still useful result of the last-named operation—the polishing of the surface.

29th Int. Do you understand the invention described to include the first step, which you state to be coating the wire with fibrous material?

A. I so understand it.

30th Int. Was not the coating of the wire by fibrous material old and well known before the invention described?

A. It was.

31st Int. Do you mean, then, to be understood that the invention of the patentee was, in part, the coating of the wire with fibrous material?

A. Certainly not.

32d Int. Was the dipping or applying the insulating material to a coated wire any part of the discovery or invention of the patentee?

A. It was not.

33d Int. Was the smoothening or polishing of a coated and dipped wire (I mean a wire coated with fibrous material and dipped or covered with a plastic or liquid material) any part of the invention of the patentee?

33 A. I do not understand that it is claimed to be, unless the last named operation is performed by compression.

34th Int. How can you polish such a wire without compression?

A. I know of no way to do it.

35th Int. Are you acquainted with the manufacture of hoop-skirt wire, including the fibrous covering, dipping in starch or other solutions or plastic substances, and then smoothening and ironing and compressing?

(Objected to by complainant's counsel as incompetent, irrelevant, and immaterial.)

A. I am not.

36th Int. Are you acquainted with the manufacture, including the smoothening and polishing, of shoe laces?

(Same objection.)

A. I am not.

37th Int. You used, if I understand you, long prior to 1872, telegraph wire covered with a fibrous coating and more or less insulated by a preparation of wax or paraffine, or both. Was not such wire ever subjected by you or your employees to any compressing, or smoothening, or polishing, prior to use?

A. Not to my knowledge.

38th Int. Are you acquainted with or have you examined any of the following named English patents, to wit: No. 933, date, 1857; No. 13698, of 1851; No. 29056, of 1853; No. 1072, of 1864; No. 3331, of 1862?

(Objected to, as not warranted by the direct examination.)

A. I am somewhat acquainted with the first two patents named, but have not examined the last three so for as I recollect.

Nov. 18th. FRANK L. POPE.

Attest: WILLIAM J. MANN, *Examiner.*

34 *Complainant's Exhibit Product Patent. W. J. M., Nov.* 18, 1880.

No. 6955. Reissue.

The United States of America to all to whom these presents shall come:

Whereas Joseph Olmsted, of Providence, Rhode Island, assignor, by mesne assignments, to the Western Electric Manufacturing Company, of Chicago, Illinois, has presented to the commissioner of patents a petition praying for the reissue of letters patent for an

alleged new and useful improvement in insulating telegraph wires, (for which letters patent were issued to him, dated July 23, 1872, which letters having been surrendered, the same have been canceled, and new letters ordered to issue to said assignee on two separate amended specifications), a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said Western Electric Manufacturing Company, its successors or assigns, for the term of seventeen years, from the twenty-third day of July, one thousand eight hundred and seventy-two, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof.

35 In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the city of Washington, this twenty-ninth day of February, in the year of our Lord one thousand eight hundred and seventy-six, and of the Independence of the United States of America the one hundredth.

[L. S.] Z. CHANDLER,
Secretary of the Interior.

Countersigned:
R. H. DUELL,
Commissioner of Patents.

36 UNITED STATES PATENT OFFICE.

JOSEPH OLMSTED, of Providence, Rhode Island, assignor, by mesne assignment, to the Western Electric Manufacturing Company, of Chicago, Illinois.

Improvement in Insulating Telegraph Wires.

Specification forming part of Letters Patent No. 129,858, dated July 23, 1872; reissue No. 6955, dated February 29, 1876; application filed December 22, 1875.

DIVISION B.

To all whom it may concern:

Be it known that I, Joseph Olmsted, of the city and county of Providence and State of Rhode Island, have invented a new and useful improvement in insulating telegraph wires, of which the following is a specification:

The method of insulating now in use consists in braiding over the wires a fibrous covering, after which it is dipped in wax, for the purpose of filling and closing its pores, and, after a subsequent scraping to remove the surplus wax, it is ready for use. This method is, however, objectionable, inasmuch as it leaves the covering in a

very rough and soft condition, and fails to secure perfect insulation.

In my improved method, after the wire has received its coating, I dip it in paraffine or wax, after which, instead of scraping off the surplus coating, I pass the whole through a suitable machine, which compresses the covering and forces the paraffine or wax into the pores and secures perfect insulation. By so compressing the covering the paraffine or wax is forced into the pores, and the surface becomes and appears polished.

37 Wire insulated in this manner is entirely impervious to the atmosphere, of greater durability, and less cumbersome than any heretofore made.

Having thus described my invention, what I claim as new, and desire to secure by letters patent, is—

An insulated telegraph wire, the covering of which has its pores filled and its surface polished, substantially as described.

JOSEPH OLMSTED.

Witnesses:
THOMAS C. CONNOLLY,
WARREN L. COLLAMER.

38 *Complainant's Exhibit Process Patent. W. J. M., Nov.* 18, 1880.

No. 6954. Reissue.

The United States of America to all to whom these presents shall come:

Whereas Joseph Olmsted, of Providence, Rhode Island, assignor, by mesne assignments, to the Western Electric Manufacturing Company of Chicago, Illinois, has presented to the Commissioner of Patents a petition praying for the reissue of letters patent for an alleged new and useful improvement in insulating telegraph wires, (for which letters patent were issued to him, dated July 23, 1872, which letters having been surrendered, the same have been canceled, and new letters ordered to issue to said assignee on two separate amended specifications,) a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said Western Electric Manufacturing Company, its successors or assigns, for the term of seventeen years, from the twenty-third day of July, one thousand eight hundred seventy-two, the exclusive right to make, use, and vend the said invention throughout the United States and Territories thereof.

39 In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the city of Washington, this twenty-ninth day of February, in the year of our

Lord one thousand eight hundred and seventy-six, and of the Independence of the United States of America the one hundredth.

[L. S.] Z. CHANDLER,
Secretary of the Interior.

Countersigned:
R. H. DUELL,
Commissioner of Patents

40 UNITED STATES PATENT OFFICE.

JOSEPH OLMSTED, of Providence, Rhode Island, assignor, by mesne assignments, to the Western Electric Manufacturing Company, of Chicago, Illinois.

Improvement in Insulating Telegraph Wires.

Specification forming part of Letters Patent No. 129,858, dated July 23, 1872; reissue No. 6954, dated February 27, 1876; application filed June 4, 1873.

DIVISION A.

To all whom it may concern:

Be it known that I, Joseph Olmsted, of the city and county of Providence, and State of Rhode Island, have invented a new and useful improvement in insulating telegraph wires, of which the following is a specification:

The method of insulating now in use consists of in braiding over the wire a fibrous covering, after which it is dipped in wax, for the purpose of filling and closing the pores, and, after a subsequent scraping, to remove the surplus wax, it is ready for use. This method is, however, objectionable, inasmuch as it leaves the covering in a very rough and soft condition, and fails to secure perfect insulation.

In my improved method, after the wire has received its coating I dip it in paraffine or wax, after which, instead of scraping off the surplus coating, I pass the whole through a suitable machine, which compresses the covering, and forces the paraffine or wax into the pores, and secures perfect insulation. By so compressing the covering the paraffine or wax is forced into the pores, and the surface becomes and appears polished.

41 Wire insulated in this manner is entirely impervious to the atmosphere, of greater durability, and less cumbersome than any heretofore made.

Having thus described my invention, I claim as new, and desire to secure by letters patent—

The method of insulating telegraph wire, by first filling the pores of the covering, and subsequently compressing this covering, and thereby polishing its surface, substantially as described.

JOSEPH OLMSTED.

Witnesses:
C. SEDGWICK.
T. B. MOSHER.

42 And on the 12th day of December, 1881, defendant's evidence was filed, in the words and figures following, viz:

Testimony Taken on Behalf of Defendant.

Circuit Court of the United States, District of Connecticut.

WESTERN ELECTRIC MANUFACTURING CO.
vs.
ANSONIA BRASS AND COPPER CO. } In Equity.

NEW YORK, *Feb.* 11, 1881.

LEMUEL W. SERRELL, presented as a witness on behalf of defendant, and duly sworn.

By Mr. WOOSTER:

1st Int. Please state your name, age, residence, and place of business.

A. Lemuel W. Serrell, 51 years old, and reside in Plainfield, N. J.; my place of business is 140 Nassau street, N. Y., and I am a solicitor of patents.

2d Int. How long have you been in the business of solicitor of patents; have you acted as expert in patent cases; and, if so, for how long and to what extent?

A. I have been in the patent agency business for over 30 years; I have frequently been called as an expert in patent causes in the U. S. courts during the last 25 years.

3d Int. Has your attention ever been directed to the subject-matter of braiding machinery, and the different processes of covering wire; and, if so, to what extent?

A. I have procured several patents upon braiding machines, and I am generally familiar with braiding machinery; I am also
43 familiar with the covering of wire with braided threads, and I have also procured several patents upon insulated telegraph wires and cables, and am generally familiar with the state of the art in connection with braided wire and insulated wire.

4th Int. Have you examined the reissued letters patent 6954, 6955, divisions A and B, issued to Joseph Olmstead, assignor to the Western Electric M'f'g Co., and do you understand the invention therein claimed in each?

A. I have and I do.

5th Int. Please state the invention claimed in each, as you understand it.

A. In the reissue of 6954 I find described a method of manufacturing insulated telegraph wires. According to that method, and the statements made in the specification, I understand the invention of Olmstead to relate to the use in succession of three operations. The first point of the method is to cover the wire with some fibrous material; this may be done by braiding, or in any of the other known modes of covering; the second in the method or process is to dip

the covered wire into melted paraffine or wax or any similar material; and the third point of the process is to pass the wire, its covering and its coating, through a pressing device. I do not understand that the said patent secures either of these steps of the process, separately considered, but only the process as a whole. The division B of the reissue No. 6955 relates to the wire, namely, an insulating telegraph wire, the only peculiarity of which is the smooth or polished surface. As I understand the said patent, it admits in substance that before the invention of Olmstead, telegraph wire had been covered by a braiding of fibrous material; that then this covered wire had been dipped into melted paraffine or wax, in order that this might soak into the pores of the fibrous covering, and that the surplus wax had been scraped off; that the invention of Mr. Olmstead related to the dispensing with the scraping operation, and substituting therefor a pressing operation for forcing the insulating material, such as the paraffine or wax, into more intimate contact with the fibrous material and the wire, and that this division B of
44 the said reissue relates to the wire having a polished surface, resulting from the compression, as distinguished from the surface which would be left by the removal of the surplus paraffine or wax by the scraping operation.

6th Int. Do you understand division A to claim every known process of compressing covered and dipped wire, which, in its results, shall compress and polish the surface?

A. I do not understand that division A is limited to any particular kind of wax or equivalent material for filling the pores of the fibrous covering, and I do understand that the method therein set forth would be infringed by dipping the fibrous covered wire into any suitable melted insulating material, and then subjecting the covered coated wire to a compressing operation, and I do understand that the device employed for compressing may be of any suitable character.

7th Int. Do you understand that the specification in division A claims the compressing of covered and dipped wire with or without removing any of the paraffine or wax that shall adhere by dipping?

A. I understand by the specification and division A that Mr. Olmstead admits that before his invention the wire had been covered with braiding, dipped in wax, and the surplus scraped off; that these three operations were well known, and he states: "Instead of scraping off the surplus coating I pass the whole through a suitable machine." From this and other portions of the specification I understand that there must not be any scraping operation performed for the removal of the surplus coating according to the invention of Olmstead, but that the whole of the covering of paraffine or other substance must be passed through the pressing device, and simply smoothed or polished.

8th Int. If the scraping process or other process, which should remove a portion of the paraffine or wax, should be resorted to before the smoothing or polishing process claimed in this division, would that process be within the claim of the patent?

45 A. It would not, in my judgment, especially if the scrap-

ing operation was usefully employed as an intermediate step in the process. The specification of division A distinctly sets forth: "I pass the whole through a suitable machine." If, therefore, there was any utility in scraping off or removing the surplus paraffine, that would only be doing what Olmstead admits had been done before; and to simply smooth the paraffine and covering would not, in my judgment, be the same as the third step in the process described by Olmstead, which is to "force the paraffine, or wax, into the pores." Of course, if the paraffine on the outside of the covering is first scraped off, that cannot be forced into the pores, and instead of performing the third operation according to the Olmstead patent, the wire would simply be left with a smooth surface. I would here remark that I do not understand that in the scraping or removing of the surplus paraffine, or similar material, the surface is necessarily left in a rough condition. Whether that was so or not would depend upon the character of the device used to remove the surplus paraffine or wax.

9th Int. Have you turned your attention to and examined into the state of the art relating to the subject-matter and process described and claimed in divisions A and B prior to the dates of said patents; and, if so, will you state what you find the state of the art to have been, and give in full all the facts within your knowledge bearing upon the same?

A. I have examined carefully into the state of the art, and I am aware that, before the invention of Mr. Olmsted, telegraph wire and cables had been covered by fibrous material, and that this fibrous material had been in the form of threads—in some instances braided or wound around the wire; that in other instances tapes or strips wound helically around the wire, and that in many instances two or more layers of such coverings had been made use of. I am also aware that insulating material, such as paraffine, wax, bitumen, gutta percha, and varnishes of different characters, had been employed as a material that would soak into the fibrous cover-
46 ing and accomplish two objects, the first being to unite the fibres firmly together and cause them to adhere to the metal wire; the second, to exclude moisture, thereby preventing the insulation of the telegraph wire being injured by moisture coming into contact with the wire. I am also aware that the surplus coating material, such as bitumen, had been removed by a scraping or rubbing operation, and that the fibrous material had been compressed for the two-fold purpose of consolidating the fibre and the bituminous material, so as to cause it to adhere to the wire, and thereby rendering the surface of the coated wire more uniform in size than it would be if simply covered with the fibrous material and its coating of wax. I refer to the patent of Edward Maynard, in which there was a fibrous covering applied to the wire in several layers. I also refer to the English patent 13698, granted in 1851, in which is described a variety of devices, and among them, on page 6, lines 2 to 22, a manner of covering wires for electric telegraphs. After describing the use of bituminous materials, the inventor says, beginning with line 16: "The incasement of this wire with bitumen may

also be effected by covering it with a filamentous material, which has been previously saturated with melted bitumen, and then passing the wire so covered through a heated die or orifice, so as to melt or soften the bitumen upon the filamentous material, and press the whole of the coating against the wire in such a way as to cause it to form one compact, continuous covering of the wire, and thus insure its insulation."

In the English patent 933, granted in 1857, the inventor describes an improvement in the wires or conductors of electric telegraphs. Upon page 6, line 12, he states: "I will further remark that, although I prefer bitumens for the coatings of telegraph wires, my process is equally applicable to all fatty or resinous substances possessing sufficient insulating power, for example, to gum-lac varnishes, fatty varnishes, solutions of india rubber, etc."

Upon page 10, line 28, he states after describing the various guides and devices made use of, as follows: "Independent of these
47 guides, which act as smoothers, intended to throw off the excess of bitumen with which the covered wire may be loaded, I arrange one or several smoothers, *l*, the function of which is to compress and regulate these successive coverings." Upon page 11, lines 2 and 3, he says: "I can also vary at will the nature of the coverings and also that of the coatings, by having several different baths of coating material. I can also in certain cases use tapes, strips, or bands of impermeable tissue and paper, etc., instead of the tapes or bands of cloth." And he describes very fully the cotton and other coverings in the form of ribbons or tapes. Then upon page 11, line 36, he says, speaking of the covered wire: "In its passage from one drum to the other it passes through straightening rollers, P, then through a bath of hot bitumen, I, I, or over the groove of a pully dipping and revolving in the bath of hot bitumen, as before described, and by this means receiving a coating, the excess of which is wiped off by scrapers or smoothers, *l*, made of copper or other elastic material, through which it passes. The wire being thus coated, then passes through the hollow end of the axis, A, of a revolving frame, which carries 3 bobbins charged with tapes or ribbons, and arranged so that in turning with the frame on which they are mounted they deposit three helicoidal turns of the tape or ribbon around the wire during its passage through the said revolving frame. The wire, after being covered, passes through the smoothers, l^1, which, like the frame on which the bobbins are mounted, receive a rotary motion from any motive power." Upon page 11, line 28, this inventor says: "The same apparatus serves to obtain analogous results with other insulating preparations, such as preparations of india rubber, gum-lac, fatty oils, etc."

In view of these statements in patents granted long prior to that of Olmstead, I am unable to discover in the patent of Olmstead, as broadly stated, anything that is novel. Olmstead admits that his invention did not relate to the use of the covering, or to the use of paraffine, or to the scraping operation, and this I find fully sustained by the state of the art; and I find also that in these
48 patents, from which quotations have been given, that it was

not new to compress or smooth the coated covering, but that, on the contrary, Baudouin, in his English patent, 933, of 1857, expressly sets forth that the covering, coated and saturated with insulating material, and names a number of those insulating materials, is to be pressed and smoothed. Thereby I understand that Mr. Olmstead was not the first party to compress or smooth any such coated covering, and that the process described by him is old, and, the process being old, there is no distinguishing feature in the article resulting from that process. I am unable to imagine any difference that can be pointed out as existing in a wire, covered, coated, and compressed according to Baudouin's process and one covered, coated, and compressed according to division B of the Olmstead reissue.

Adjourned to Feb. 12, at 11 o'clock.

SATURDAY, *Feb.* 12.

10th Int. Are you acquainted with the method of finishing shoe-laces and hoop-skirt wires? And, if so, please state the treatment of each of these articles, and the finishing or final processes, and the resemblances to, or differences from, the mode described in the process patent of Olmstead's.

A. I am generally familiar with the method of manufacturing shoe-laces, corset-laces, and the covered skirt wires. In the manufacture of shoe and corset-laces the cord is formed of a number of threads braided together; sometimes there is a core of fibrous material, and sometimes this core is omitted. After the lace has been braided it is usually passed into a vat of sizing; this is especially the case in the manufacture of shoe-laces. The surplus sizing is usually pressed out by passing the lace through between rollers. When the lace is almost dry it is passed between pairs of revolving brushes, which smooth down the fibres, polish the surface of the lace, and create a current of air, which completes, or nearly so, the drying operation.

49 This is also usually done where there is sufficient heat to drive off the remaining moisture from the shoe-lace. The result of this treatment is that the lace is solidified, and its surface rendered very smooth. In the manufacture of hoop-skirt wire a covering of fibrous material has been applied to the flattened wire. In some instances this covering has been a tape wrapped around the wire and caused to adhere thereto by glue or other adhesive material. In other instances this fibrous covering has been made of threads braided around the wire, and this has been passed through a vat of sizing material, the surplus being pressed off of the covering by rollers or similar devices. The sizing has then been partially dried by heat, and then the braided covering has been polished and compressed by the action of heated surfaces, so that the finished article has a surface that is smooth, and the braided covering is caused to adhere to the wires by the sizing. When the hoop-skirt wire was first made the covering was not sized, and it was found to absorb moisture, and the wire became rusted and the appearance of the skirt disfigured. The sizing was adopted to beautify the appearance of the wire and

lessen the risk of the wire becoming rusty, and also to prevent the braided coverings slipping upon the surface of the wire. In regard to the division A of the complainant's reissue patent, I find that the method therein described does not differ in any respect from the method made use of in the manufacture of hoop-skirt wire, except that in the said reissue patent an insulating material, such as paraffine or wax, is named as the material for coating the covering for securing more perfect insulation. I am not aware of the extent to which starch or sizing employed in the manufacture of hoop-skirt wire will act as an insulating material, but my opinion is that a telegraph wire in which the braided covering was sized with starch and polished the same as skirt wire would be superior to one in which the sizing and compression had not been used. Unless the method patent of complainant is limited to some particular coating material, I do not discover any material difference between that and the method of coating hoop-skirt wire, and I do not find in the specification or claim of the said reissue any limitation as to the material made use of. It is true that in the method heretofore made use of in manufacturing hoop-skirt wire the terms of the claim are employed, viz: "By first filling the pores of the covering and subsequently compressing this covering, and thereby polishing the surface."

Cross-examined by Mr. BARTON:

11th X-Int. In your opinion would the shoe-laces and hoop-skirt wire, prepared in the manner you have described, be a good electrical conductor?

A. The shoe-lace would not; the hoop-skirt wire would conduct the electricity, but it could not be conveniently used under circumstances where telegraph wire is generally employed, because it could not be easily bent to sharp angles.

12th X-Int. In your opinion what effect would water have upon the sized coverings of hoop-skirts?

A. It would soften it after a while, and the sizing would harden again if the wire was allowed to dry.

13th X-Int. While moist would the hoop-skirt wire be a practicable electric conductor?

A. That would depend upon circumstances. If the moisture was on portions of the wire in contact with an external conductor, the water would probably divert the electrical current or a portion of it; but if the moist portion of the covering was in contact with wood or other insulating material within a building, the moisture would not be injurious to any noticeable extent.

14th X-Int. What is the object of insulating telegraph wire?

A. To prevent the electric current being diverted from the wire under the circumstances where such wire may be fixed. If the wire is to be used inside of a building, where it will not be in contact with moisture, a simple fibrous covering will insulate the same and prevent the contact with the metal wire of any metal or other conducting substance. If the wire is to be used in an exposed place,

the insulating covering should be of water-proof material, in
51 order to prevent moisture diverting the current. Wires are also insulated to lessen the inductive electrical effect where there are several wires near each other.

15th X-Int. Do you consider starch or sizing water-proof?

A. No.

16th X-Int. Please define invention briefly in your own language, as you understand it in the eye of the patent law?

A. A step in advance of what has been done before.

17th X-Int. What is a combination?

A. The association of two or more devices acting to one common object.

18th X-Int. What is the infringement of a combination?

A. The use by another of the whole of the elements claimed in the combination or their substantial equivalent. A combination is never infringed by a less number of elements than those which are set forth in the claim.

19th X-Int. Are you able to determine by inspection whether the dipped wire had its covering compressed and polished?

A. I have never made any test to ascertain whether or not I could distinguish a dipped wire whose surface was said to be compressed and polished from a dipped wire whose surface was simply polished. If the wire is simply dipped in paraffine, it would look different from a wire whose surface is either compressed or polished, or both. I could not say whether a dipped wire with its surface scraped would look different from a dipped wire with its surface compressed or polished, or both, because I have never tested that.

20th X-Int. Could you determine from an examination of the resulting products whether the wire had been sand-papered or rubbed after it was dipped and before it was run through the compressing and polishing machine?

A. I have never made any test in that direction, and therefore cannot say positively; but my opinion is that I could tell the difference between two products, one of which was a wire with its
52 covering dipped in paraffine, and the whole of the paraffine compressed and polished without the removal of any of the paraffine as contemplated in the complainant's patent, and one in which a portion of the paraffine had been removed before polishing, because in one instance there would be less paraffine than in the other and the wire would be smaller, and there would be less weight to a given length.

21st X-Int. Which of these two kinds of wire would, in your opinion, be the best, and give your reasons for any opinion you may express?

A. Under the average condition of use, I think one would be as good as the other. The reason for this opinion is that where the entire reel of covered wire is soaked in the melted paraffine it is reasonably presumed that the air is all driven out and displaced by the paraffine; hence the interstices of the fibrous covering are all filled with the paraffine. If, under the first condition of the previous answer, the whole of the paraffine adhering to the fibrous covering

remained, and the covering, hence, is of greater thickness than when a portion of the paraffine bas been removed or wiped off, there will be a greater bulk of insulating material. That, in my judgment, would be the preferable condition if several wires were laid togther into one cable, because there would be sufficient paraffine to fill up the spaces between one covered wire and the next. If the wire is to be used singly, it is my opinion that it would be better for the surplus paraffine to be removed, so that the covered wire would be smaller. Under either condition, the covering and the paraffine will form a sufficient insulating material for the wire.

22d X-Int. From the appearance of the finished product, could you determine whether it had been sand-papered or not?

A. I have never made the test, but my opinion is that wire can be coated, saturated with paraffine, sand-papered and polished, so that it cannot be distinguished from wire covered, saturated with paraffine, and simply polished and compressed.

LEMUEL W. SERRELL.

New York, Feb. 12, 1881.

Attest: WILLIAM J. MANN, *Examiner.*

53 Mr. Wooster here offers in evidence, on behalf of defendant's English patent referred to, viz., No. 933, A. D. 1857; No. 13698, A. D. 1851, to be marked respectively Defendant's Exhibit Baudouin Patent, W. J. M., Feb. 12, 1881, and Defendant's Exhibit Dundonald Patent, W. J. M., Feb. 12, 1881, and they are so marked.

FRIDAY, February 18th.

Parties present by their respective counsel.

Defendant's counsel here produces a sample of hoop-skirt wire, which is marked Defendant's Exhibit Hoop-skirt Wire, W. J. M., Feb. 18, 1881.

The complainant's counsel admits that hoop-skirt wire of differing widths has been covered by fibrous materials, and then run through a vat of liquid sizing composed substantially of flour, potato starch, glue and water; after which the wire is run between heated cylinders or heated irons, and then drawn over heated calenders, producing the result shown in exhibit marked Defendant's Exhibit Hoop-skirt Wire, W. J. M., Feb. 18, 1881, and that this process and article has been common since 1864 or 1865.

The defendant's counsel admits that wire covered by that process has not been practically used for telegraph purposes, and that such covering is not water-proof.

New York, Feb. 18, 1881.

Attest: WILLIAM J. MANN, *Examiner.*

54 *Defendant's Exhibit. Dundonald's Patent.*

A. D. 1851, No. 13698.

Sewers, Drains, Waterways, Pipes, &c.

Dundonald's specification.

To all to whom these presents shall come, I, Thomas Earl of Dundonald, late of Chesterfield street, in the county of Middlesex, but now of Belgrave Road, in the same county, Admiral in Her Majesty's navy, send greeting:

Whereas, her present Most Excellent Majesty Queen Victoria, by her royal letters patent, under the great seal of Great Britain, bearing date, at Westminster, the twenty-second day of July, one thousand eight hundred and fifty-one, (in the fifteenth year of her reign,) did, for herself, her heirs, and successors, give and grant unto me, the said Thomas Earl of Dundonald, my ex'ors, adm'ors, and assigns, her especial license, full power, sole privilege, and authority that I, the said Thomas Earl of Dundonald, my ex'ors, adm'ors, and assigns, or such others as I, the said Thomas Earl of Dundonald, my ex'ors, adm'ors, or assigns, should at any time agree with, and no others, from time to time, and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend within England, Wales, and the town of Berwick-
55 upon-Tweed my invention of "Improvements in the construction and manufacture of sewers, drains, waterways, pipes, reservoirs, and receptacles for liquids or solids, and for the making of columns, pillars, capitals, pedestals, bases, and other useful and ornamental objects from a substance never heretofore employed for such manufactures;" in which said letters patent is contained a proviso that I, the said Thomas Earl of Dundonald, shall cause a particular description of the nature of my said invention, and in what manner the same is to be performed, by an instrument in writing, under my hand and seal, to be inrolled in Her Majesty's high court of chancery within six calendar months next and immediately after the date of the said in part recited letters patent, as in and by the same, reference being thereunto had, will more fully and at large appear:

Now know ye, that, in compliance with the said proviso, I, the said Thomas Earl of Dundonald, do hereby declare that the nature of my said invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the several drawings hereunto annexed, (that is to say):—

My invention consists in the construction and manufacture of useful and ornamental objects from a substance never heretofore employed for such manufactures, (that is to say) by the adaptation and use of the bitumen, petroleum, or natural pitch of Trinidad and of the British North American colonies, in the construction and

manufacture thereof. And in order that my said invention may be fully understood, and readily carried into effect, I will proceed to describe the means pursued by me.

The natural bitumen obtained in Trinidad and the North American colonies is of various qualities, some descriptions of it being more or less indurated, and other descriptions being of a more soft or even fluid or semifluid consistence, thus furnishing a manufacturer with a considerable variety of materials, appplicable to the manufacture of various articles according to my invention. For the
56 purpose of making articles according to my invention, therefore, I select the bituminous material which may be best adapted to the manufacture of the intended articles. Thus, if it be desirable that the articles to be manufactured should be firm, and possess great strength, I select a bitumen possessing those qualities, such as the indurated bitumen of Trinidad; and if it should be desirable that the manufactured article should be more or less flexible, I select a bituminous material (such as found in the pitch or bitumen of Lake Trinidad) possessing the requisite amount of flexibility. I am also enabled to vary the quality of the bituminous materials which I employ by mixing and blending two or more different descriptions of material in such proportions as may be necessary to produce a combination having the requisite qualities. For the purpose of combining two or more kinds of bitumen it is necessary that they they should be brought into a state of fusion in some suitable vessel, after which they should be intimately blended or mixed together, so as to make the compound article as homogeneous as possible; and the mixing or blending of these materials will be much facilitated by reducing the hard descriptions of bitumen into powder or small pieces, and mingling the different kinds together before they are heated. The material usually called bitumen is generally hard when cold, and a compound bituminous material, less brittle or softer, may be produced by combining such hard bitumen with the requisite quantity of soft bitumen usually called petroleum. If a material of a still softer or more flexible description be required bitumen may be combined with the requisite proportion of naphtha or fluid bitumen. When I intend to make pipes, or other similar articles which must be capable of resisting a considerable degree of internal pressure, I select a bitumen which is not only hard but also possesses considerable tenacity, and much of the indurated Trinidad bitumen is of this description. If the proper description of bitumen be selected, or produced by combination in the manner I have described, pipes may be constructed possessing a degree of
57 strength approaching that of cast-iron pipes of the same weight, and, not being subject to oxidation, the pipes, when used for conveying water, will be almost indestructible. When I make pipes for conveying water, or other purposes, I prefer to cast them in open moulds and with one side flat, as shewn at F, F, in the cross section, figure 1. In figure 2 I have shewn a cross section of a trough or mould, C, C, C, such as may be used for this purpose, and which must be of the length and diameter requisite to produce pipes of the required dimensions. Within this mould I

place core D (figure 2), and I coat the mould and the core with clay, black lead, or any other material which will prevent the melted bitumen from adhering to them. The bitumen is then to be melted in iron or other vessel of a convenient description, and it must be heated to such a degree as will make it run freely into every part of the mould.

When pipes are made in the manner I have mentioned, their flat sides will make them stand firmly upon any foundation on which they may be placed; but they may, if required, be cast round, or in any other desired shape. But in every case in which the material may be cast in a mould, or with any core which is to be withdrawn, care must be taken to give surfaces which are intended to come in contact with the melted bitumen a coating or covering of clay, black-lead, or some other material which will prevent the bitumen from adhering to it. Lengths of these pipes may be united or joined together, simply by interposing a heated plate of metal, to produce semi-liquefaction of the surfaces, or by directing a hot blast or jet of flame thereon, and then pressing the parts together, or their junction may be effected by means of liquid or melted bitumen, which, when it becomes cold or indurated, will make a solid joint. Plates, sheets, or tables of bitumen, of any of the qualities I have mentioned, may be made by first casting a convenient quantity of the material in the shape of a block, and then, whilst it remains soft or plastic, passing it through between rollers, until it shall have been reduced to plates, sheets, or tables of the required thickness. Whilst the
58 block of bitumen is undergoing this operation the rollers or other apparatus used for this purpose must be kept warm by steam or other convenient means, and clay, black-lead, steam, hot water, or some other convenient means must he adopted for preventing the adhesion of the bitumen to the rollers of other apparatus employed. Plates, sheets, or tables of this description may be used to line water cisterns or reservoir, and also to form floors or impermeable coverings for excluding damp, and for other purposes. When these sheets of bitumen are used to form a lining for a cistern or reservoir I cause the edges of the sheets to unite or adhere together, by applying heat or a solution of bitumen. Heat may be applied by an iron resembling a soldering iron, and, where requisite, some of the bitumen, powdered or in small pieces, may be applied between the edges of the sheets, and melted so as to cause it to unite to the edges of the sheets. If a solution of bitumen be used the bitumen may be dissolved in naphtha, and made of a pasty consistence, and if introduced in this state between the edges of the sheets it will adhere to them, and when it becomes indurated by the evaporation of the naphtha it will form a solid joint. By uniting the edges of the sheets in one or other of these modes the joints between the sheets may be made water-tight, and the material will be almost indestructible. It will be desirable in many cases that the bituminous material used for constructing water cisterns or reservoirs should possess some degree of flexibility, so as to enable it to yield slightly to any pressure to which it may be exposed, and prevent it from being fractured by any slight change of form or position. The thickness

of the sheets may vary according to the size of the cistern of reservoir, but I deem sheets of about one inch thick to be of such a substance as to be generally useful. When these sheets or tables are used to form floors or impermeable coverings their edges may be joined or united in the same manner as I have already described. The thickness of the sheets or tables used for such purposes must be varied according to the pressure of mechanical action they will have to sustain or bear, and the thinner they are the more flexible; I perfer to make them so
59 as to prevent them from being broken when bent by any pressure to which they may be exposed. Sheets or plates of bitumen, made as already described, may be cut into long strips and formed into pipes or tubes by being bent transversely round a core D, as shown in figure 3, whilst in a soft or plastic state. The edges of I, I, being then pressed down and brought close together at K, they may be united in like manner as I have already described. Pillars, pedestals, capitals, ornamental fittings, and other articles, *x*, may be cast in suitable modes or shapes in like manner as already described with respect to the casting of pipes; and such articles may either be cast solid or hollow, or with a piece of some other material (as wood or iron, for instance), to strengthen them or save material. In casting pipes or other articles in manner already described, I allow the articles, when cast, to remain in their moulds for a considerable time, because the material cools slowly, and removing them too early would injure, if not destroy, them. In hot weather it may be desirable to accelerate the cooling by throwing cold water upon the mould and the casting which it contains. Sheets of bitumen, prepared in manner already described, when made thin and flexible, may be strengthened by having cloth pressed against them, and thus united with them; and such sheets may also be made double, having cloth or other texture placed between two thin sheets of bitumen (so to form what may be called intertexture), and be united together by rolling or some other sufficient pressure. The cloth, or webs, which I prefer to use for this purpose is made of a light open texture, and of hemp or any other cheap material. I prefer to prepare the cloth by impregnating it with a small portion of a solution of bitumen or liquid bitumen, so as to cause it to adhere more readily and completely to the sheet or sheets of bitumen to which it is to be united. When the texture of the cloth employed is very wide and open it may be used without preparation, for the bitumen, when sufficiently softened by heat, may, by rolling or other pressure, be made to adhere to the cloth; but the adhesion of the cloth will be much promoted by impregnating it with naphtha or
60 petroleum. Sheets of bitumen intended to be thus combined with cloth or other equivalent should be warmed or heated sufficiently to make their surfaces adhesive, and the surfaces of the roller or other presses by means of which they are united to the cloth should be coated with clay, black-lead, or such other material as will prevent the adhesion of the bitumen to them. Pieces of cloth or other such material may also be coated with the said imperishable bitumen on one or both sides, by having solutions of bitumen

applied to them, either by a brush or other convenient means, and, if necessary, several coats of the solution may be applied, until a covering of the said bitumen of the requisite thickness is obtained. When the natural naphtha in which the bitumen has been dissolved shall have sufficiently evaporated, the material will be fit for use. Combinations of bitumen and cloth, made in the manner I have described, will form sheets of various descriptions, which may be applied to various purposes, such as coverings for ships' bottoms (between the vessel and the metallic sheathing), linings for coffins, and various other useful purposes. I also employ a bituminous material to cover, and thus insulate, the conducting wires of electric telegraphs, which are intended to be placed underground. For this purpose I employ the said bitumen, either simple or compounded, of a flexible description, and pass the wire through it when it is in a melted state, then causing the wire to pass through some die or orifice, which will deprive it of all the superfluous bitumen, after which I pass it through water, or (which I prefer) an emulsion composed of water and clay, or water and lime, so as to deprive the surface of the bitumen of its adhesive qualities and cool it. The covered wire may then be wound upon a reel, or otherwise coil, so as to be ready for use, and in hot weather it may be desirable to do this under water. The coating of wire in this way will be more uniform if it be previously covered with some cheap filamentous material, and the impregnation of this filamentous material by the bitumen will be much facilitated by first passing the covered wire through naphtha or some other fluid bitumen or solution of
61 bitumen. The encasement of this wire with bitumen may also be effected by covering it with a filamentous material, which has been previously saturated with melted bitumen, and then passing the wire so covered through a heated die or orifice, so as to melt or soften the bitumen upon the filamentous material, and press the whole of the coating against the wire in such a way as to cause it to form one compact continuous covering of the wire, and thus insure its insulation.

In figure 4 of the said drawings I have shewn, in a transverse section, another mode of insulating electric conducting wires, which is more particularly applicable in cases in which it may be desired to lay down several of such wires. In figures 4 & 5, H is a core, which may be made of hempen rope or any other convenient material, upon which I put a thick covering, I, I, of flexible bitumen, either of the thickness shewn in the figure or any other thickness which may be sufficient to contain the wires. This covering may be put upon the core in the same way as I cover wires as hereinbefore described. Small longitudinal grooves 2^1, 2^1, 2^1, 2^1, being made in the periphery or surface of the bitumen by appropriate projections in a heated die or collar through which the core H, with its covering, is drawn; the wires are then to be laid along the grooves 2^1, 2^1, after which I cover the whole with lengths of longitudinal strips of bitumen I^1, I^1, *f*, *f*, figures 5, in like manner as I have described with respect to the making of tubes, such as shown in figure 3. In figure 6 of the said drawings I have shewn a side view of a

length of a case or covering containing four conducting wires, and shewing the wire protruding at each end; the end of these cases may be joined or united together in the same way as I have already described with respect to joining lengths of pipes. I also apply bitumen or petroleum, of the description already mentioned, to the coating of the bottoms of iron ships, or other metallic bodies which are subject to galvanic influences or to destruction by corrosion. For this purpose I dissolve the bitumen or petroleum in a sufficient quantity of its natural naphtha to form a material, which I
62 apply in a hot state by means of a brush or otherwise to the ship's bottom or metallic body.

In carrying out the objects I have already described I have taken advantage of the properties of the best descriptions of bitumen. I now proceed to explain the use and application which I make of the crude and less pure material, which constitutes the greatest portion of the natural bitumen I have mentioned. Suppose I wish to construct sewers, drains, or waterways, and that the trench or ditch L, L, L, figure 7, is formed to receive the sewer or structure destined to conduct the fluids in their proper course, I throw into such trench or ditch a portion of gravel, or stones, or other indurated material, M, and thereon pour crude bitumen in a molten stute to form concrete, resting firmly on the lower part of its circuit, which operations of throwing gravel and pouring melted bitumen may be continued throughout the space between N and N in the sides of the trench, and the core, mould, or form O may be used to regulate the interior dimensions of the sewer or channel to be formed; or the same may be effected by casting the parts in lengths of such forms as will go together, and produce the construction of such sewers, drains, waterways, or portions thereof. In this case I join the blocks together in the manner hereinbefore described, or by running in melted bitumen between the joints, or using petroleum in its natural plastic state. Further, I employ the said crude bitumen for other useful purposes to which it has not heretofore been applied, namely, to construct submerged foundations for submerged works, as shown in figure 8, by pouring it in a boiling state, combined with gravel stones or such like materials constituting a bituminous concrete P, into the water over the site of the intended foundation whereon the boiling fluid will descend, retaining sufficient fluidity to conform to the shape or adhere to the solids it may rest upon; if the bottom is of a soft nature, and the concrete is continued to be poured thereon, the successive portions will firmly unite to those previously immersed, and form one block of any magnitude or strength necessary
63 for the contemplated superstructure, as shown in figure 9.

My said method of forming submerged foundations is equally adapted to their construction on sand banks or shoals in the sea, where extended surface, solidity, and strength are essential. Such crude bitumen, or bituminous concrete, I use in like manner to support decayed or undermined piers, pillars, or walls, as shewn in figure 10, and for other purposes, such as arresting and consolidating rolling gravel or shifting sand (often productive of great mischief), and for forming embankments.

Lastly, I effect an object by the application of crude bitumen, which is highly conducive to the interests of the British tropical colonies, namely, by forming channels water-tight, or nearly so, for enabling the copious streams from the mountains, which hitherto have run to waste or been absorbed in the beds of the streams, to be conducted to the places where their fertilizing effects may be beneficially applied. For this purpose I render the beds of the streams water-tight, or nearly so, by means of a coating of bitumen, S, S, S, figure 11, which (in localities destitute of other means for melting) may be strewed in the channels, and fused by burning brushwood or other combustibles laid amongst or upon it.

In witness whereof, I, the said Thomas Earl of Dundonald, have hereunto set my hand and seal, this twenty-second day of January, one thousand eight hundred and fifty-two.

DUNDONALD. [L. S.]

And be it remembered, that on the twenty-second day of January, in the year of our Lord 1852, the aforesaid Thomas Earl of Dundonald, came before our said Lady the Queen in her chancery, and acknowledged the specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the specification aforesaid was stamped according to the tenor of the statute made for that purpose.

Enrolled the twenty-second day of January, in the year of our Lord one thousand eight hundred and fifty-two.

64 *Defendant's Exhibit. Baudouin Patent.*

A. D. 1857. No. 933.

Electric Conductors, and Machinery for the Manufacture Thereof.

Letters patent to Felix Marie Baudouin, of Paris, in the Empire of France, manufacturer, for the invention of "Improvements in the Wires or Conductors of Electric Telegraphs, and in the Machinery for the Manufacture thereof."

Sealed the 23rd April, 1857, and dated the 3rd April, 1857.

Provisional specification left by the said Felix Marie Baudouin at the office of the Commissioners of Patents, with his petition, on the 3rd April, 1857.

I, Felix Marie Baudouin, of Paris, in the Empire of France, manufacturer, do hereby declare the nature of the said invention
65 for "Improvements in the Wires or Conductors of Electric Telegraphs, and in the Machinery for the Manufacture thereof," to be as follows:

My invention relates to the preparation of conductors of electricity for electric telegraphs, being wires insulated to prevent the loss or deterioration of the electric currents used for that purpose, and also in the machinery for the preparation of manufacture of such conductors. I coat the wires with bituminous or such like fatty matters

that are not liable to become hard or crack, but, on the contrary, are constantly acted on by the temperature of the atmosphere. Coatings of this material in themselves are insufficient to maintain the proper protection and insulation for telegraph conductors, but when combined with other materials, such as paper, woven fabrics of cotton, silk, wool, or hemp, in a particular manner, are well adapted for the purpose.

The machinery constituting part of my present invention is adapted for the application of the textile material or paper with the bituminous matter to such conductors, whereby they are completely insolated, such insolation being of an enduring character and less liable to become defective than wires insulated in the ordinary manner.

The machinery is of two kinds, one of which conducts the operation of lapping the ribbons or strips of paper or other suitable material around the coated wire, the wire having a motion of transmission in the direction of its length, and also a rotary motion for winding on the ribbons.

The wire is wound on a reel or drum, whose axis is placed in a frame mounted on an axis. The wire is conducted over suitable guide pullies through the spindle, and in a line with the axis of the rotating frame and thence to a drum in another similar rotating frame placed at a distance from the first. The latter drum has a motion to wind on the wire, while the first wire drum has a brake to create sufficient tension on the wire in its being drawn off, thus a motion of rotation and transmission are simultaneously imparted to the wire.

66 The ribbons or reels containing the ribbons or strips of material to be wound on the wire are placed between the two rotating frames, with their axes placed at such an angle or incline to the wire that as the wire rotates and traverses lengthways it winds upon it a helical coil from each bobbin whose edges are closed united, the position of the bobbin being regulated to insure their close contact. I prefer to use three ribbons and bobbins for this purpose, the first covering of the wire being enveloped by the second in such manner that the helical junction of the first ribbon is covered by the second, and the second by the third. The wire is passed through a bath of hot bitumen, and has the superfluous matter removed by passing through suitable dies or parts to scrape and smooth its surface and render it of uniform thickness.

The first and second ribbons are also passed through bituminous or other suitable matter to render them more impervious to electricity. The coated and lapped wire is passed through suitable dies to remove superfluous matter, to smooth down the lapping of the ribbons, and to compress and cause their proper adhesion. The ribbon reels are furnished with breaks to produce sufficient tension of the ribbon. The ribbons may be applied without any bituminous coating, or they may be coated previously to the winding on the supply bobbins.

In another arrangement of machinery according to my invention, I wind the wire to be coated on one wheel or drum and draw it off

by another. These drums have no rotary motion except on their own axes; the wire, consequently, has no motion other than in the direction of its length. In its passage from one drum to the other it passes first through straightening rollers, then through a bath of hot bituminous matter, of which it receives a coating, the excess being wiped and smoothed off by leather bushes or dies, through which it passes. The coated wire now passes through the hollow axis of a rotating frame in which three ribbons are carried, disposed so that they lap three helical coils of the ribbon around the wire during
67 its transmission through that frame, the disposition and effect produced being similar to that before described with the last machine. The coated and lapped wire passes through dies or smoothing holes both in entering and leaving the rotating frame; these dies or smoothers have rotary motion, the better to enable them to wipe and smooth the coated wire. The wires, while under operation, may either be disposed vertically or horizontally; and instead of one rotating frame with three or other number of ribbon bobbins, I sometimes use one frame for each ribbon. The wires before coating are properly cleaned, and in either method of coating may be straightened by passing between rollers both before and after the application of the coatings.

The apparatus before described may be used for coating wire with impermeable bands treated with coatings of solutions of india rubber, mixtures of tallow and resin, and other insulating compositions; but of all others I prefer natural bitumen, such as the Bastennes bitumen, as, although they have the inconvenience of being affected by the temperature of the atmosphere, they may be varnished over with solutions of india rubber or gutta-percha, or other impervious matters.

In forming telegraph cables of wires covered as described I wind the wires on reels and place them in a rotating frame around its axis. From the reels the wires all converge to a point and pass out through the hollow axis of the frame, by whose motion they are twisted together, the twisted end of the combined wires being prevented rotating.

I also prepare telegraph conducting cables by tying the covered wires on a strong flat band of fibrous material well impregnated with bitumen, and also covering them with a band of strong or light material similarly treated. Instead of tying the wires on by riveting or sewing I can weave the wire in the band or strap. I afterwards impregnate the strap thoroughly with bitumen, and, if necessary, further cover the wires by another band or strip of material on each side of the band in which the wires are placed, which strips are also bitumenized if desirable. I impregnate the warp threads with bitumen before weaving.

I further coat telegraph wires by strips or bands of woven
68 or other suitable materials lapped round them, the seam or joint being in the direction of its length, which I effect by drawing the wire through hot bitumen and through a draw plate with the covering material, which is thereby lapped round and encloses the coated wire. Two or more such coatings can be applied,

in which case I place the joints of the covering at opposite sides of the wire.

In laying down these telegraph bands or strips, which may or may not have been impregnated with bitumen, I first place in the bottom of the trench a thickness of bitumen, and above the conducting strap a second thickness of melted bitumen; I sometimes mix sand, gravel, or earthly matters with the bituminous mastics when embedding the wires in solid blocks of this substance in a plastic state. In order to protect telegraph conductors when used underground in towns where they [are] liable to the action of gas, which injuriously affects bituminous matters, I coat the bituminous blocks in which the covered wires are embedded with thickness of paper or metallic leaf, which is not easily penetrated by the gas; the paper for this purpose should be treated with insoluble soap or some material to better enable it to resist the action of the gas. The metallic leaves should be soldered at the junction to render it impermeable to the gas. If the lower part and sides of the bituminous bed be coated thus, it is some considerable protection, but it is better to be entirely enveloped. A coating of potters' clay or even of plaster assists in preserving the bitumen.

Specification in pursuance of the conditions of the letters patent, filed by the said Felix Marie Baudouin in the Great Seal Patent Office on the 3rd October, 1858.

To all to whom these presents shall come, I, Felix Marie Baudouin, of Paris, in the Empire of France, manufacturer, send greeting:

69 Whereas Her Most Excellent Majesty Queen Victoria, by her letters patent, bearing date the third day of April, in the year of our Lord one thousand eight hundred and fifty-seven, in the twentieth year of her reign, did, for herself, her heirs, and successors, give and grant unto me, the said Felix Marie Baudouin, her special licence that I, the said Felix Marie Baudouin, my executors, administrators, and assigns, or such others as I, the said Felix Marie Baudouin, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time, and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an invention for "Improvements in the Wires or Conductors of Electric Telegraphs, and in the Machinery for the Manufacture thereof," upon the condition (amongst others) that I, the said Felix Marie Baudouin, my executors or administrators, by an instrument in writing, under my or their or one of their hands and seals, should particularly describe and ascertain the nature of the said invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said letters patent:

Now know ye, that I, the said Felix Marie Baudouin, do hereby declare the nature of my said invention, and in what manner the

same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the two sheets of drawings hereunto annexed, and to the letters and figures thereon (that is to say):

My invention relates to a particular method of preparing the wires conducting the electricity for electric telegraphs, for the purpose of insulating them, and thereby avoid loss and alteration of electric currents; and it also relates to the mechanism by the aid of which such preparation and manufacture of these conductors is effected.

The elastic and impermeable substances ordinarily em-
70 ployed for covering the wire conductors of electricity for the purpose of insulating them generally present this serious inconvenience: On account of their elasticity they get out of form, and are easily impressed under greater or less pressure to which they may be submitted, particularly when they are at the same time subject to a sufficiently elevated temperature to soften them. Thus, under the influence of heat, copper wires covered with gutta-percha, simply by the effect of the alterations of the metal in expanding or contracting, make holes through such coverings, and come in contact with the metal coverings intended to protect them on the exterior, and thus destroy their insulation. To remedy this great inconvenience, I insulate telegraph wires by alternate coatings of insulating matters, and covering bands or tapes of textile fabrics, which are themselves prepared with insulating matters, each layer being compressed, and the continuity of the same preserved throughout, the whole producing a body of such consistency and power of resistance to the alteration of form that the insulating materials do not of themselves possess.

Among the substances suitable for producing good insulating coatings are bitumens, which, on account of their not being liable to change, and small cost, appear to me capable of being advantageously employed, either alone or in combination with other insulating matters of a more costly description, such as gutta-percha, india rubber, &c.

Bitumens, in fact, although they have the inconvenience of being influenced by heat, possess, on the other hand, the all important property of being indefinitely preserved without alteration, while their softening by the action of heat is rendered immaterial by the interposition of the narrow bands of textile fabric with which I cover them, and which hold the thin layers of this substance placed between their coils or folds. Care must be taken not to confound pure bitumens, bitumens properly so-called, such as good bitumens of Bastennes, for example, with tars and other analogous matters, which contain, when mixed, either a considerable quantity of vol-
atile substances, the subsequent evaporation of which renders
71 the coating friable, or even of water, and substances having an affinity for water, such as alkaline matters or acids, which may consequently compromise the insulating power of the coatings. I will further remark, that although I prefer bitumens for the coatings of telegraph wires, my process is equally applicable to all fatty or resinous substances possessing sufficient insulating power, for ex-

ample, to gum-lac varnishes, fatty varnishes, solutions of india rubber, &c.

The mechanism I employ in order to effect the insulating coating of the conducting wires is of two kinds; the first, represented at figures 1 and 2, sheet 1, effects the operation of winding the ribbons or bands of woven fabric, paper, or other suitable material, around the coated wire, the wire receiving a travelling or advancing motion in the direction of its length, and at the same time a rotary motion, in order to wind around it the ribbons or bands. This apparatus is arranged as follows: Figure 1, sheet 1, represents a plan of the apparatus, and figure 2, sheet 1, represents an elevation of the same.

The wire to be covered is wound on a drum T, which I call the winding-off drum. This drum is carried by an axis, on which it can revolve, obeying the traction of the wire in being unwound. The motion of this drum is moderated by a sufficiently powerful friction brake, so that the wire may be kept in sufficient tension when being unrolled. The bearings in which the axis of the drum turns are carried by a frame B, which can itself take a rotary motion on its axis A, A, on which the frame is mounted, the direction of which is at right angles to that of the axis of the drum T. The axis A, A, one end of which is hollow, revolves in bearings C, C, mounted on uprights as shewn. The wire unrolling from the drum T passes on to a grooved pulley P, intended to straighten it, and bring it in the direction of the hollow end of the axis A, through which it passes.

Opposite this first drum apparatus, and at a distance of about two or three yards, there is another drum apparatus, similarly arranged and disposed, with the exception of the following modifications, which arise from the fact that it is on this second drum T^1
72 that the wire has to be wound after its preparation. For this purpose, after the wire has received its insulating covering, in the manner hereinafter explained, it passes through the hollow end of the axis A^1 of the second apparatus, thence over the groove of the pulley P^1, and on to the drum T^1, on which it is wound.

The drum frame B^1, carrying the drum T^1, itself revolves on its axis A^1, A^1. This rotary motion is imparted to it by a toothed wheel E^1, deriving its movement from any motive power; and on the same shaft another toothed wheel E imparts the same motion to the frame B, so that the whole system revolves around the line F, F^1, which is at the same time the axis of the part of the wire stretched between the two drum frames, and consequently the wire also receives a rotary motion with the whole system. At the same time, as the wire revolves on its axis, and by reason of this motion, it also takes a traversing longitudinal movement from right to left, which is given to it by the following mechanism: On the upright or support carrying the bearing C^1 of the left-hand frame a toothed wheel R is fixed, through which the hollow end of the axis A passes and turns. This toothed wheel gears with another toothed wheel R^1, termed a satellite wheel, the axis of which turns in bearings fixed to the frame B^1, and it is controlled by this frame in its rotary motion around the hollow end of the axis A^1. In consequence of this ar-

rangement, when the frame revolves on its axis, the satellite wheel, which it controls, cannot obey this motion otherwise than by itself taking a rotary motion around its own axis. The number of revolutions it thus makes on its axis at each revolution of the frame depends on the relative diameter of the said satellite wheel R^1 with that of the fixed wheel R with which it gears. At its opposite end the prolonged axis of the satellite wheel carries an endless screw V, which gears into a screw wheel R^{11}, concentric with the drum T^1, and rigidly connected therewith. Each revolution of the endless screw V causes one tooth of the wheel R^{11} to pass, and consequently causes the drum T^1 to perform the equivalent amount of revolution; for instance, if the wheel R^{11} has forty-eight teeth, the drum T^1 will turn one forty-eighth part of a revolution on its axis.

73 It will be understood that in this manner at each revolution of the frame B^1, and consequently at each revolution of the wire, the drum T^1 on which the wire is wound (after it is covvered) revolves a determined extent on its axis, and causes the wire F, F^1, to advance so much; thus the wire receives a double motion, one on its axis and an advancing motion from right to left. But, in order to assure the proper action of the apparatus, I have added other mechanism to regulate the winding of the wire on the drum T^1 according as it receives its coverings.

It must be remarked that the wire, after having passed over the groove of the pully P^1, which is tangential to the direction of the axis of rotation of the hollow shaft A^1, through which it passes, should deviate in its direct course, in order to distribute the wire fairly on the drum; for example, if the winding-on is commenced on the side of the drum next the flange, it should be guided gradually towards the right flange, come back to the left, return to the right, and so on; inclined a determined extent, depending on the thickness of the covered wire, so that the successive coils may be wound regularly till they have formed a first stage, covering the surface of the drum; they then form a second stage, being guided in the contrary direction, and then a third, &c., without which, the wire being always wound in the same place, the coils would be wound on without order, and would be liable to produce irregularity in the winding and working of the apparatus.

To conduct the winding, therefore, I have established a guide, to which the motion of the system itself imparts a to-and-fro motion, suitably calculated for the purpose.

The guide G, intended to conduct the wire, consists of a pulley, the groove of which is V-shaped; the arm carrying the guide, pulley G, is connected and forms one body with two bosses, M, M, sliding with slight friction on two rods parallel to the axis of the drum T, and rigidly connected with the frame which carries the axis of the said drum. This arm carrying the guide is prolonged, and terminates at its other extremity in a fork carrying two rollers, between which the thread of a cam is gripped; it is composed of two

74 segments of screws H and H^1, uniting at their two extremities, and each of which comprises in its action the distance between the two checks or flanges of the drum T. This cam is carried on an

axis parallel to that of the drum, and turns in two bearings fixed on the frame of the revolving machine. A toothed wheel is attached to this shaft, and is connected by a series of toothed wheels which receive motion from a pinion fixed on the drum T. These gearings are calculated to transform the rotary motion of the drum around its axis into slower rotary motion, so that, if, for example, the covered wire with its covering inclusive be about one-third part of an inch in diameter, and if the distance between the flanges or checks of the drum be about ten inches, there would be room for winding thirty coils side by side on the drum; the toothed gearing should be so arranged that while the drum T makes thirty revolutions on its axis the screw cam H, H[1], may make half a revolution, or, what amounts to the same thing, while the drum makes sixty revolutions the screw cam makes one revolution on its axis. The cam is besides so arranged, that when the fork which it moves is at the left-hand angle, formed by the meeting of the two half screws, forming the cam, the guide is in close relation with the left-hand flange or check of the drum, consequently every time that the drum turns on its axis and that a coil of wire is wound on the drum the cam accomplishes one-sixtieth of a revolution, and the wire is thereby traversed one-thirtieth of the breadth of its traverse, that is to say, the thirtieth part of 10 inches, equal to the size of its diameter, or the necessary amount for placing a second coil in position; after thirty revolutions of the drum, and the winding on of the thirty coils, the wire arrives at and touches the right cheek of the drum, at the same time that the fork guided by the movement of the first half of the cam arrives at the extremity of this first part, when the second half screw or part of the cam which makes an angle with the first, and is inclined in the inverse direction, acts by the continuation of the rotary motion and traverses the fork in the opposite direction, which it conducts from right to left, and in this manner the wire takes a gradual to-and-fro motion, which causes it to be wound with perfect regularity and in successive stages or layers on the drum T.

I would remark that by means of the separation of the two frames having hollow axes, which carry the one the drum containing the naked wire, and the other the winding-on drum, on which the wire is wound after it has received its covering, the space between these two revolving frames remains free and perfectly accessible to the attendant while they are performing their common rotation.

It is in this interval of space that the baths of melted bitumen or other substance are placed suitable for furnishing the coatings as well as the bobbins charged with coverings of textile fabric, the guides and smoothers for regulating the winding, the fire or gas burners serving to keep the bitumen and the various parts of the apparatus hot, without which the bitumen might become solid too soon.

Figures 1 and 2 show some of the detailed arrangements of this part of the apparatus. As seen, there is in the direction of the length of the wire to be covered, and at a sufficient distance, a frame or bed, consisting of two hollow cast-iron girders, Q, Q[1]. This bed is hollow, so that a jet of steam can be passed through it in order to keep it

hot. The various guides, smoothers, or other necessary parts may slide and be fixed by nuts between these two girders.

In front of this bed, and under the wire to be covered, a long box, I, I, is hooked, filled with melted bitumen, and kept hot by fires or jets of ignited gas; J, J, other gas jets, made movable by means of flexible tubes, which can be moved and conducted below all the parts which it may be necessary to heat.

A grooved pulley, O, of sufficient diameter, turning on an axis supported by a movable part, D, dips a sufficient distance into the bath of bitumen, and is in contact with the surface of the wire, which causes it to revolve. This wheel thus keeps its periphery constantly loaded with hot bitumen.

Above the apparatus are suspended a sufficient number of
76 reels, K, K^1, K^2, K^3, of large diameter, on each of which a sufficient length of each of the tapes or ribbons serving to cover the wire is wound. These bobbins are furnished with brakes, so that the ribbons may be kept in sufficient tension while being wound on the wire, each of these tapes or ribbons *b*, b^1, &c., before passing on the wire dips into the bath of bitumen passing between the two prongs of a horizontal fork *f*, which can be raised and lowered at the will of the operator by means of a slide made in the part D which carries it. The tape or ribbon on rising passes above a small cylinder *c* of polished iron, placed horizontally below the wire F, F^1, so that the said ribbon may be presented in a position inclined to the wire, and at any suitable angle, which is easily determined, as follows: If *x*, Fig. 6, sheet 2, be the distance the wire advances each time it revolves on its axis and *y* its circumference, and if a right-angled triangle be formed having *x* and *y* for the sides containing the right angle, the angle formed by the hypothenuse *z* and the side *x* will be that the ribbon should make with the axis of the wire. The hypothenuse *z* will be the length of each coil, and the perpendicular *w* will be its width.

In order that the wire may not make a kink or twist when turning on its axis, but that, on the contrary, it may be wound well, according to the axis of the general rotary motion, and that the winding of the ribbon may be effected with regularity, I place supports *g* in front of and behind the point where the ribbon is wound, through which supports the wire to be covered passes; they are carried by slides which permit of their position being regulated exactly.

Independent of these guides, which act as smoothers, intended to throw off the excess of bitumen with which the covered wire may be loaded, I arrange one or several smoothers *l*, the function of which is to compress and regulate these successive coverings.

The parts which carry these various parts are arranged as indicated in the figures, so as to allow of their being moved from right to left, and from front to back, and reciprocally, and even to allow of some of them, *f* and *c*, being placed at various angles.

By means of these arrangements I can cover the wire at
77 one operation with as many coatings and insulating coverings as I wish. For which purpose it is sufficient to vary the

number of pullies which apply the bitumen, and of the bobbins carrying the supply of tapes or bands, and of the guides, smoothers, &c. I can also vary at will the nature of the coverings and also that of the coatings by having several different baths of coating material; I can also in certain cases use tapes, strips, or bands of impermeable tissue and paper, &c., instead of the tapes or bands of cloth. Among other combinations the following is a very efficient and cheap covering:

First, a coating of bitumen on the surface of the wire.

Secondly, a covering of cotton, ribbon, or tape which has been dipped into the bitumen.

Thirdly, the application over this first ribbon covering the bitumen of a tape or narrow band of gummed taffetas or fine cotton, prepared in the same way as gummed taffetas.

Fourthly, a second covering of tape or ribbon permeated with bitumen.

Fifthly, a last covering of dry tape or ribbon, intended to absorb the excess of bitumen, and to obviate the viscosity it would present if it had remained uncovered.

I can substitute for this last covering of dry ribbon a covering composed of strong threads of hemp or linen, or even narrow strips of card, in order to give greater solidity to this exterior protection. I can also substitute for this last covering of dry ribbon a narrow band of waxed cloth which has been well dried at a stove.

Experience has shown me that the varnished cloth which covers the gummed taffetas, or the materials prepared in the same manner, cannot be attacked by the essential oils of gas tar, so much to be feared for the other coverings, therefore I think that in certain cases it would be well to double or even treble this covering of gummed stuff, care being taken to superpose on each a bituminous covering in order to cement them well together.

78 The same apparatus serves to obtain analogous results with other insulating preparations, such as preparations of india rubber, resin, gum-lac, fatty oils, &c.

Fig. 3, sheet 2, represents another arrangement of mechanism with which I can obtain the same results.

I first wind the wire to be covered round a pulley or a drum, T, from which I unwind it by the aid of another drum, T^1. These two drums revolve on their axes and remain in the same position; the wire F has consequently no other motion than its advance in the direction of its length. In its passage from one drum to the other it passes through straightening rollers, P, then through a bath of hot bitumen, I, I, or over the groove of a pulley dipping and revolving in the bath of hot bitumen, as before described, and by this means receiving a coating, the excess of which is wiped off by scrapers or smoothers, *l*, made of copper or other elastic material through which it passes. The wire being thus coated, then passes through the hollow end of the axis, A, of a revolving frame, which carries three bobbins charged with tapes or ribbons, and arranged so that in turning with the frame on which they are mounted they deposit three helicoidal turns of the tape or ribbon around the wire

during its passage through the said revolving frame. The wire, after being covered, passes through other smoothers, l^1, which, like the frame on which the bobbins are mounted, receive a rotary motion from any motive power. This arrangement produces a similar result to that obtained by the preceding mechanism.

This apparatus instead of being horizontal may be placed in a vertical position. Instead of having a single revolving frame carrying the three bobbins, I can employ a revolving frame for each bobbin, and multiply the number as much as may be required. These bobbins are besides furnished with friction brakes, in order to give sufficient tension to the ribbon. In this arrangement, as it is not the wire that turns, but, on the contrary, the bobbins charged with the covering ribbons or tapes, it is not possible to pass these ribbons into a bath of bitumen at the moment of covering the wire with them, but they may be coated previous to being wound on the bobbins.

79 The method of covering the wires which I have described, whether effected by one or the other of the above two descriptions of mechanism, may be advantageously applied to wires already covered with gutta-percha or india rubber, and it would have the result of completing and perfecting the insulation, and of preventing deterioration of the currents of electricity.

According to my method of covering telegraph wires, the inner coating of gutta-percha may be very thin, at the same time rendering it as continuous as possible, and by applying one or several alternate coverings of bitumen and impermeable tapes or bands, I not only completely obliterate the interstices of other defects which the gutta-percha may present, but also make it less easily put out of shape, as these coverings of textile fabric hold it, and do not allow it to be so easily displaced.

The application of this process also furnishes another means of preventing damage being received by gutta-percha coverings of wires. Gutta-percha has the defect of not uniting well with the wire and not adhering to it; it is therefore more liable to be cut; but if a first covering of ribbon or other adhesive insulating, or a covering of linen, hempen, or cotton threads, perfectly cemented, be applied, first on the wire by the aid of a glutinous insulating coating, and if a layer of gutta-percha be placed over the wire previously thus furnished with a covering susceptible of being agglutinated when hot with the gutta-percha, then the gutta-percha, owing to the adhesion it will contract with this first insulating covering, which cannot be displaced, will be less easily damaged or put out of form, even if pressed upon when it softens by high temperatures of the atmosphere; having besides its external surface held by the covering of textile fabric with which it will be covered, it will present all desirable solidity and security. This combination, simple as it may appear, seems to me of importance. The wire being thus covered with insulating coverings, I can collect them in bundles and form them into long coils of cables, submitting them to a slight twisting by the ordinary means. For this purpose I have obtained a very good result

80 from the mechanism represented at figures 4 & 5, sheet 2. In

this mechanism I wind the covered wires on drums T, T, and place in a frame B, revolving round its axis A, A^1. From these drums the wires all converge towards one point by means of guide rollers, P, and go out through the hollow end of the axis A of the frame, by the motion of which they are twisted together. The twisted end of the wires collected together is held so as to prevent it from turning, and it is wound on a large winding or drum, which is put in motion by any motive power whatever, and exercises a sufficient drawing force on the cable at the same time that it winds it. I can besides, by the same means as before, cover the cable, before rolling it on the winding-on roller, with coats of bitumen and impermeable coverings, which will be another guarantee for their insulation.

Instead of arranging the groups of wire covered thus in round cables, I can give them when united the form of a flat cable or kind of strap, either by attaching the covered wires on strong flat bands of textile or fibrous matters, well impregnated with bitumen, or by weaving them with strong hempen or other threads, previously prepared and impregnated with bitumen, so as to form an open work-band in the chain or warp of which the conducting wires are placed; I then impregnate these kinds of bands or flat cables with bitumen, and cover them either on one side or on both sides, if necessary, with bands also impregnated with bitumen.

When these bundles of covered wires are to be placed underground, whether they are in the form of round or flat cables, I either simply lay them in the trenches, coating them at the same time with hot bitumen, or I bury them in a long block or a sort of girder of bituminous mastic, with which I incorporate, for greater solidity and economy, sand, gravel, or other earthy matters, taking care that such matters are in a very dry state. For this purpose I first apply to the bottom of the trench a thickness of bituminous mastic, and above the round or flat cable I run a sufficient thickness of this same mastic to unite with the first and surround the conducting cable on all sides.

81 For telegraphic conductors, placed underground in towns, and exposed to the action of gas used for lighting purposes, which affects more or less most insulating matters, and particularly bituminous matters, in a pernicious manner, I cover the last covering of these cables, or the bituminous blocks in which the wires are buried, with a covering of paper or sheet of metal, which is not easily penetrated by the gas. Paper used for this purpose should be treated with a solution of sulphate of copper or of a silicate, then with insoluble soap, or any other preparation best capable of resisting not only the action of gas but any alteration which might result from humidity. The sheets of metal are soldered at their junctions to render them impermeable to gas.

If the bottom and sides of the bed of bitumen are thus covered it may be a sufficient protection, but it is better to cover it altogether. In some cases a covering of potters' clay, plaster, or other plastic substance may also contribute to preserve the block of bitumen. This means of preservation from the dissolving action of gas, applied to the external covering of the wires, is independent of that result-

ing for each wire from the presence of gummed taffetas or gummed cotton tissue, which I include, as above mentioned, in the composition of the insulating coating of each of these wires, and which I could also use for the exterior covering of my cables and the bituminous blocks in which I may enclose them.

Having described the nature of my invention, and the manner of performing the same, I declare that what I claim as my invention, intended to be protected by the hereinbefore, in part, recited letters patent, is—

First, the insulation of the wires or conductors of electricity by the application of insulating coatings or coverings, consisting of tapes or ribbons of tissue of textile, or thread material themselves, either previously impregnated or not with insulating matters, applied alternately with layers of insulating matters, as hereinbefore described.

82 Secondly, the use and application of the apparatus or combination of parts represented at figures 1 and 2, sheet 1, for the purpose of covering and insulating the wires or conductors of electric telegraphs, as hereinbefore described.

Thirdly, the use and application of the apparatus or combination of parts represented at figure 3, sheet 2, for the purpose of covering and insulating the wires or conductors of electric telegraphs, as hereinbefore described.

Fourthly, the combination of this particular method of covering telegraph wires or conductors with the means heretofore adopted for their insulation, and particularly with coverings of gutta-percha or of india rubber, either by first covering the wire with a case of gutta-percha, for example, and applying thereon coverings of the kind hereinbefore described; or, on the contrary, by first applying the covering on the wire, and then applying the gutta-percha or india rubber coating, as described.

Fifthly, the manner of congregating and forming the wires covered as hereinbefore described into the form of round cables, to which cables the same mode of covering may be applied.

Sixthly, arranging and uniting the wires covered as hereinbefore described in the form of flat cables or straps, either by attaching them on to flat impermeable bands, or by weaving them with hempen threads which may previously be rendered impermeable to electricity, the said flat cables or straps can be doubled or covered above and below by thickness of tissue, also rendered impermeable to electricity.

Seventhly, the modes herein described of insulating and embedding a congregation of wires intended to form a telegraphic conductor when embedded under ground, particularly by placing them in long blocks of bituminous matter.

Eighthly, the means hereinbefore described of preserving telegraphic conductors thus placed under ground from the de-

83 structive effects of gases used for lighting purposes, by surrounding them with coverings which are not attacked by gases or the essential oils thereof.

In witness whereof, I, Felix Marie Baudouin, have hereunto set my hand and seal, this first day of October, in the year of our Lord one thousand eight hundred and fifty-seven.

F. M. BAUDOUIN. [L. S.]

84 MARCH 16TH.

Parties present by their respective counsel. Duly adjourned to March 17th.

MARCH 17TH.

Parties present by their respective counsel.

Defendant's counsel here offers in evidence certified copy letters patent granted to Edward Maynard February 8, 1859, No. 22,922, to be marked "Def't's Ex. Maynard Patent."

LEMUEL W. SERRELL, witness for defendant, duly recalled for further examination in behalf of defendant.

By Mr. WOOSTER:

23d Int. If since your last examination you have looked into the process of the defendants at their manufactory, and have made any experiments by different processes in finishing wire after the same has been dipped in paraffine, you will please so state, and when and where the examinations were so made, the different processes you employed and the product of each, and illustrate by examples of wire which you have.

A. I went yesterday up to Ansonia, Conn., for the purpose of ascertaining the mode of manufacture of covered wire made by defendants. I saw the various processes employed by them and took samples of the products. I produce sample marked No. 1, which is a piece of wire the surface of which is covered with braided threads. This sample corresponds to the material as it comes from the braider. I bind the ends of the fibre together to keep them from fraying. I had previously requested that a tubular die or scraper should be made corresponding in size to the braided wire sample No. 1. That tubular scraper has been made, and I here produce the same. It is marked "No. 4, Scraping Tube or Die." I now pass the wire through that scraping tube or die to illustrate that the same is of the size to properly correspond to the braided wire. While at Ansonia I had some of the braided wire dipped into the melted paraffine or wax, in the usual manner made use of, as I
85 was informed, in the preparation of the wire made by complainants. After allowing the paraffine upon said coated wire to cool, I drew the wire through the scraping tube No. 4. I produce a piece of the wire so drawn; it is marked No. 3. During this operation scraping die No. 4 was cold. I then had the said scraping die No. 4 warmed, and I drew through the same another piece of the covered and dipped wire. I produce the same, and it is marked No. 5. I did not discover any difference in the operation of the scraping tube No. 4 when warm or cold, except in the former

instance there was less resistance in drawing the wire through the scraping tube. I here produce the chips of wax as they were scraped off by the scraping tube No. 4; they are marked No. 8. Some of these chips came from the die when warm, others when it was cold. I examined the machine made use of by the defendants in the manufacture of wire, and I was informed that it was the same machine that it had constantly used. In my presence some of the same covered and dipped wire was put through the machine. I here produce a sample thereof, marked No. 6. I found that the machine made use of by the defendants scraped off from the covered and coated wire the surplus paraffine or wax, and that it reduced the wire to the same size, or nearly so, as the hole in the scraping tube No. 4. I here produce some of the chips scraped off by this machine, whereof the surplus paraffine was removed from the braided covering. The said chips are marked No. 9. A question arose while in discussion at Ansonia whether the length of the scraping tube made any difference in the surface of the wire. We had another scraping tube, about three times as long as the tube No. 4, but it did not work as well as the tube No. 4. We tried some annunciator wire that had upon it simply a wound covering; the same was dipped into paraffine and allowed to cool, after which it was drawn through the tubular scraper, the tube of which is only about a quarter of an inch long, the back part being bored out to shorten the length of the tubular scraper. This worked quite as well as tubular scraper No. 4.

86 The sample which I now produce, marked No. 7, is a coil of this annunciator wire, with the scraping tube or die upon it. Upon an examination it will be found that the majority of the wire has been drawn through that tube, but a portion of it remains in the condition in which it existed after being dipped in the melted wax. The wind of the thread upon this wire has become filled with the paraffine while in its melted condition, and the tubular scraper has simply removed the surplus paraffine, leaving the wire in a smooth and uniform condition.

Complainant's counsel objects to answer so far as witness states he was informed, as hearsay and incompetent.

24th Int. Does die or scraper No. 4 compress the covered and dipped wire as it passed through it by the process you have described?

A. It does not. My directions concerning the manufacture of scraping tube No. 4 were to have the ends square, and it has been so made as accurately as possible. Any slight appearance of bevel resulted simply from the use of emery in polishing the interior of the tube.

25th Int. Did the defendant's process of manufacture, which you saw and understood to be their ordinary process, scrape off or remove a portion of the surplus wax or paraffine from the coated or dipped wire?

Objected to by complainant's counsel, as calling on witness to testify to facts not within his previous knowledge.

A. While I was there the machine was only run a portion of the time, at my request. I understood that they had not a sufficient stock of covered wire ready for the machine so as to keep it in operation. Underneath the machine was a pan in which was a large accumulation of chips or scrapings, from which the sample No 9 was taken. From the wire which was run through in my presence, chips of wax were scraped off and thrown into the pan, and these were of the same general character as the chips that were already in
87 the pan. Some of the chips from the machine, while it was in operation in my presence, fell outside of the pan, and I picked them up and compared them with the pieces in the pan, and I put some of each in the box, sample No. 9.

26th Int. Will you compare the products, or the wire manufactured by the different processes you have described, and state the differences, if any, which exist between the same?

A. I have compared them carefully, both yesterday and to-day. On one occasion, with a powerful sunshine shining upon them, and with a magnifying glass. So far as the samples 3, 5 and 6 are concerned I cannot discover any difference between them, except at one place in sample No. 5 I discovered that the wax was scraped off a little more closely on one side than it was on the other. I do not think this makes any difference in the product, and I do not think it would be noticed under other circumstances than the powerful light and magnifying glass spoken about.

27th Int. To what do you attribute the unequal scraping in sample No. 5, of which you have spoken?

A. It arose in this manner: One of the workmen had hold of one end of the piece of wire, and was drawing it through the warm die while another guided it through the die. The wire had been coiled in rather a small coil, and hence the curvature caused one side of the wire to bear against the end of the scraping tube more forcibly than the other side. This would not have occurred had the wire been straight.

28th Int. Would it be practicable to construct a machine which should guide the wire through the scraping tube with sufficient tension to avoid the result you have described?

A. There would not be the least difficulty in so constructing a machine. The machine made use of by defendant does have a tension which keeps the wire straight, or nearly so, while the surplus paraffine or wax is being scraped off.

29th Int. Broadly stated, then, do you know of any mate-
88 rial difference between the product made by the process described in the complainant's patent, as existing prior to his invention, and the product of the defendant's manufacture, according to the ordinary method, as you were informed?

The last four words of question objected to, as calling for hearsay evidence.

A. While at Ansonia I saw considerable wire exactly like sample No. 6, and was informed that that was their ordinary wire. I did

not bring a piece of the same, because I preferred to bring a piece that went through their machine in my presence. I am also familiar with the covered and paraffined wire sold by the complainant, or, at least, some of it, which I have understood was made under the patent alleged by them. I have not a sample of the complainant's wire here present to compare with the samples of defendant's wire, which I have here produced, but I do not think that there is any difference between the two that can be pointed out or recognized. In the preparation of the samples 5 and 6 I made use of the devices which I understood by complainant's letters patent 6955 and 6954 to be old and well known, that is to say, I scraped off the surplus coating of wax by a scraping tube, which only removed the wax that existed upon the outside of the covering without compressing the covering or polishing the same, and samples Nos. 3 and 5 are in exactly the same condition that they were as they emerged from the scraping tube No. 4, and I have refrained from handling them more [than] was necessary for coiling them up in order that nothing might act as a polisher to the surfaces.

30th Int. If you have made any observations with reference to the finishing of coated and dipped wire, by the use of the hand with sand-paper, or cloth, or both, state it, or state the results you obtained.

A. I produce a sample, marked No. 10. The same is a piece of dipped covered wire made by defendants. I took a piece of sand-paper and drew it over the entire length of this wire by my
89 hand; I then took a cloth in my hand and wiped off the wire, drawing the cloth over the covered wire two or three times; I then passed one end of the wire through the die No. 4, and drew the same along up to the place where a bunch of wax is left; I then examined the sample of wire carefully with a powerful magnifying glass, and I found that the sand-paper and cloth had left the wire in a smooth and very handsome condition, and that the portion of the wire that had been drawn through the scraping tube No. 4 was also in a handsome and finished condition, but that there was less wax upon the surface, and I compressed with my fingers the wax that remained at the end of the scraping tube in order that the quantity of wax that had been scraped off of the 5½ inches of wire that passed through the scraping tube might be appreciated.

31st Int. For the purpose for which this finished wire is designed is there any material difference in the product of the different processes you have described?

A. There is no difference that is appreciable, as far as I can discern. I have not made any comparison of the different styles of wire in conducting electricity. I cannot realize that there could possibly be any difference in this respect, because the insulating covering in the samples which I have produced is entirely filled with paraffine, as I have found by inspection under a powerful magnifying glass, and, under the circumstances, where a wire of this character is made use of there cannot be, as far as I can understand, any difference in the quality or the character of the wire made in the different manners to which I have referred.

32d Int. Do I understand you, then, to say that without compression paraffine or wax fills the interstices of the fibrous covering?

A. It does. This results from the fact that the coil of wire is introduced into the melted paraffine or wax, which wax is so highly heated that it is similar to a very limpid oil, and it penetrates into the fibrous covering and displaces the atmosphere, and I have seen the bubbles of air rising out of the coil while in the melted wax.

90 Of course, if the atmosphere is entirely displaced by the penetration of the melted wax the pores of the covering are full and nothing more can be forced into them. All that is necessary in preparing the coated and covered wire for market is to remove the surplus paraffine or wax, this being done, as I have stated, by a scraper, does not necessarily leave the surface of the covered wire in a rough, uneven condition, but the scraper, when tubular, or in the form of a well known wire drawing die, leaves the surface in the condition shown by the samples 5 and 6. I speak of a well-known wire drawing die; by this I refer to one that is tapering at one side so as to compress the wire that is drawn through it, but this kind of a die becomes a scraper simply, and does not compress when the wire is drawn through in an opposite direction, as will be apparent by inspecting the scraping die or tube upon Ex. 7. In this case the sharp, flat end of the die is used to scrape off the surplus wax.

Defendant's counsel here offers in evidence the samples produced by witness, to be marked as exhibits in the case, and they are so marked.

Cross-examined by Mr. BARTON:

33d X-Int. Was Defendant's Exhibit No. 6 ordinary wire, sandpapered?

A. No.

34th X-Int. When and where did you become acquainted with complainant's method of manufacturing insulated wire?

A. I have referred, on more than one occasion, to the patents of complainant, granted to Joseph Olmstead. Previous to giving my evidence in this case, when looking up some matters for the Western Union Co., about a year and a half ago, I was in Chicago, in May I think it was of last year, and met Mr. E. M. Barton, secretary of the Western Electric M'f'g Co., and he kindly invited me to go through the works, which I did with my wife, and I there saw the insulated wire manufactured.

91 35th X-Int. I understand you to say that the compressed and polished wire of the defendant is manufactured by substantially the same process exhibited to you in Chicago at that time?

A. The wire which I saw manufactured at Chicago appeared to be treated slightly different from that which I saw manufactured at defendants' factory. In the polishing-machine, which I saw in operation in the factory of the Western Electric M'f'g Co. at Chicago, there was a pan or receptacle beneath the revolving polishers, and in that pan was a mass of fine particles, which appeared to be a

mixture of paraffine and the fine fibres of the cotton; this I remember noticing particularly, because the cotton covering was of a red color, and there was a very marked contrast between these red particles and the white particles of paraffine. At that time I had no idea that I should be called as a witness in connection with the manufacture of this wire, and did not scrutinize the machine to ascertain why these particles of red cotton covering were rubbed off in the polishing operation. In the pan beneath the machine used by the defendants I did not notice anything but the paraffine or wax that was scraped off. I do not think that any portion of the fibrous covering is rubbed off by defendants' machine. In the machine of complainants, which I saw at Chicago, the particles of paraffine were very small, as far as I remember. They were much more in the form of granules than the shavings of wax which I have produced, marked Def't's Ex. No. 9. Otherwise than in this particular, I did not notice any material difference in the respective modes of manufacture.

LEMUEL W. SERRELL.

N. Y., March 17th, 1881.

Attest: WM. J. MANN, *Examiner.*

92 *Def't's Ex. Maynard Patent. W. J. M., March* 17, 1881.

DEPARTMENT OF THE INTERIOR, UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted to Edward Maynard, W. K. Slaughter, and Thomas E. Purdy, dated February 8th, 1859, No. 22,922, for improved method of covering with fibrous material submerged spiral electrodes for short distances.

In testimony whereof, I, E. M. Marble, Commissioner of Patents, have caused the seal of the Patent Office to be hereunto affixed, this twenty-sixth day of March, in the year of our Lord one thousand eight hundred and eighty-one, and of the Independence of the United States the one hundred and fifth.

[SEAL.] E. M. MARBLE,
Commissioner.

UNITED STATES OF AMERICA.

To all to whom these letters patent shall come:

Whereas Edward Maynard, of Brooklyn, New York, has alleged that he has invented a new and useful improved method of covering with fibrous material submerged spiral electrodes for short distances, (he having assigned his right, title, and interest in said method to himself, R. K. Slaughter, and Thomas E. Purdy, of said Brook-
93 lyn,) which, he states, has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said method, and that the same hath

not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said method, and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Edward Maynard, R. K. Slaughter, and Thomas E. Purdy, their heirs, administrators, or assigns, for the term of fourteen years, from the eighth day of February, one thousand eight hundred and fifty-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said method, a description whereof is given in the words of the said Edward Maynard in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof, I have caused these letters to be made patent, and the seal of the Patent Office has been hereunto affixed.

Given under my hand, at the city of Washington, this eighth day of February, in the year of our Lord one thousand eight hundred and fifty-nine, and of the Independence of the United States of America the eighty-third.

[SEAL.] JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent Office.

[SEAL.] J. HOLT,
Commissioner of Patents.

94 The schedule referred to in these letters patent, and making part of the same:

To all to whom these presents shall come:

Be it known that I, Edward Maynard, of Brooklyn, in the county of Kings, and State of New York, have invented, made, and applied to use certain new and useful improvements in submarine telegraph cables, and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of my said invention, reference being had to the annexed drawing making part of this specification, wherein—

Fig. 1 is a cross section of my said cable with one conductor;

Fig. 2 is a cross section of a cable with two conductors; and—

Fig. 3 is a side view of the cable complete, and in the various stages of manufacture.

Similar marks of reference denote the same parts.

The nature of my said invention consists in the use of parallel cords or strings of hemp, flax, silk, or other fibrous material, in connection with a twisted conductor, or conductors, whereby all strain in laying said cable into the water is taken on the said strands of fibrous material, and the conductor entirely relieved from strain or liability to break, and beside this the insulation is far more perfect than with those materials, such as gutta-percha, that are liable to break open under strain and destroy the insulation.

I take a strand or cord, *a*, of fibrous material, and wind around the same the conductor *b*, composed of one or more wires of a suitable size; I then surround the same with longitudinal parallel cords or strands of fibrous, non-conducting material, *c*, and wind around the same a serving of string or thread, and during the operation of laying up I saturate this fibrous material, *c*, and all that is used surrounding the same, with wax, or similar non-conducting water-proof material, by the application of heat, to liquify the same, or by the use of suitable material in solution;
95 *d* is a serving around the cords; *c*, *e*, is a second layer of parallel cords, and *f* is the serving to the same. If only one conductor is to be used, a covering of iron wire is to be applied, as hereafter set forth, to complete the cable, as in Fig. 1, but if two conductors are to be used, I apply the sesond, as at *g*, the same being composed of one or more wires wound around the previous fibrous material (*e*, *f*); *h* and *k* are the parallel cords of fibrous material, and *l*, *m*, are the windings or servings of thread or twine. The alternate layers of the strands being composed of cords twisted in opposite directions, and coated or saturated successfully with wax, there is no liability for the cable to twist or kink, and at the same time a perfect insulation is effected. *m* is a layer of wires twisted around the cable (outside the serving *l* or *f*) with a gradual curvature, and served over as at *m*, and *o* is another layer of wires rather finer than the wires *m*, and twisted in the opposite directions, and *p* is the serving to the same.

By this manner of constructing telegraph cables for submarine use a very strong article is produced, and one that is not liable to twist or kink, and is thoroughly insulated, and all strain is taken on the cords and wire covering, which are parallel, or only slightly twisted, and the intervening serving prevents the layers of fibrous materials separating longitudinally of the cable, and the conductor or conductors, having a twist in them, are relieved from strain almost entirely.

I do not claim a telegraph cable in which strands of fibrous materials or wires are used, neither do I claim a serving wound around the same, but there is no previous instance with which I am acquainted in which a conductor in a twisted or more or less helical form has been enclosed in layers formed by parallel strands of cord, string, or other fibrous material served or wound around over the successive layers at the same time that melted wax or other non-conducting water-proof material is used to saturate said cable, and
96 thereby produce a durable water-proof cable in which the conductor is relieved from strain and perfectly insulated as specified.

What I claim as my invention, and desire to secure by letters patent, is constructing submarine telegraph cables of metallic conductors, twisted in a helical form, in combinations with layers of cords or strings parallel, or nearly so, with the axis of the cable that are confined together by a serving or winding, and are saturated with water-proof non-conducting material, as set forth.

In witness whereof, I have hereunto set my signature this twenty-third day of October, 1858.

C. MAYNARD.

Witnesses:
LEMUEL W. SERRELL,
THOMAS G. HAROLD.

Ex'd: J. W. W. M. McK.

97 And on the 11th day of April, 1881, complainant's rebutting evidence was filed, in the words and figures following, viz:

Complainant's Rebutting Testimony.

In the Circuit Court of the United States, District of Connecticut.
In Equity.

WESTERN ELECTRIC MANUFACTURING CO.
vs.
ANSONIA BRASS AND COPPER CO.

To WOOSTER & TORRANCE, *Solicitors for Defendant:*

Defendant will take notice that on Friday, March 25th, complainant will proceed to take testimony in rebuttal in said cause, before Charles A. Sawyer, notary public, or some other duly authorized officer, at his office in the Portland Block, corner of Dearborn and Washington streets, Chicago, Illinois, when and where defendant may appear if it shall see fit.

GEORGE P. BARTON,
Counsel for Complainant.

Received copy this 17th day of March, A. D. 1881.

WOOSTER & TORRANCE,
Solicitors for Defendant.

98 Met at the office of Charles A. Sawyer, room 24, Portland Block, this 25th day of March, A. D. 1881, pursuant to the notice hereto attached, to take testimony in the above-entitled cause on behalf of the complainant.

Present: George P. Barton, Esq., counsel for complainant.

Whereupon, at the request of defendant's counsel, an adjournment made to Thursday, March 31st, at 10 o'clock, a. m., at the same place.

Met at same place this 31st day of March, pursuant to adjournment.

Present: George P. Barton, Esq., counsel for the complainant.

Whereupon, by consent of counsel, the further taking of testimony is hereby adjourned till 2 o'clock p. m. this day.

Met pursuant to adjournment, at 2 p. m., at same place, and, by consent of counsel, an adjournment made to the office of George P. Barton, room 7, Howland Block, Chicago.

Present: George P. Barton, Esq., counsel for complainant, and William B. Wooster, Esq., of counsel for defendant.

Testimony of Milo G. Kellogg.

Whereupon, MILO G. KELLOGG, the first witness, being duly sworn, deposes and says, in answer to interrogatories propounded to him by counsel for complainant, as follows, viz:

Q. 1. What is your name, age, residence, and occupation?

A. Milo G. Kellogg; age, 31 years; residence, Hyde Park, Ill.; occupation, superintendent of the Western Electric Manufacturing Co., Chicago.

Q. 2. What experience have you had in the sale and manufacture of insulated telegraph wire?

99 A. From the summer of 1870 to the summer of 1872 I was connected with the firm of Gray & Barton, in Chicago, who were manufacturers and dealers of telegraph supplies, and who sold and used considerable insulated wires. From the summer of 1872 until the present time I have been connected with the Western Electric Manufacturing Co., who have been engaged in the telegraph instrument and supply business, and have sold and used a great deal of insulated wire. Since the winter of 1873 and '4 the Western Electric Manufacturing Co. has been engaged in the manufacture of such wire. For about five years I have had general charge of the manufacturing department of this company.

Q. 3. Are you familiar with the different styles of wire that have been in the market since 1870, and are you able to state the favor with which the different styles of wire have been received by the trade?

(Question objected to by defendant's counsel, as calling for an answer bearing upon the utility of the article in question, and not in answer to any testimony on the part of the respondent, and not admissible in this stage.)

A. I am familiar with the different styles, and am able to state the favor with which they have been received by the trade.

Q. 4. Please illustrate by samples the various styles of insulated wire with which you have become familiar in your business, and make them exhibits.

(The last objection repeated by counsel for defendant, and to all testimony that shall bear upon the question of utility.)

A. In 1870, and about that time, it was sometimes customary to use for office and annunciator wire copper wire covered with cotton, and without further treatment, as in the exhibit.

(Said exhibit offered in evidence, and marked "Complainant's Exhibit Cotton-Covered Wire, C. A. S.")

100 For the same purpose, the wire was sometimes covered with cotton and the surface then painted. I offer in evidence the painted wire, similar to what was then in use.

(Said exhibit is marked "Complainant's Exhibit Painted Wire, C. A. S.")

I also offer in evidence a sample of painted wire taken from a coil of painted wire which was imported from France for Gray & Barton, in the year 1871.

(Said exhibit is marked "Complainant's Exhibit Imported French Painted Wire, C. A. S.")

About this time office wire was used which had a braided cotton cover, which was varnished with shellac or other similar varnish. This wire had an extensive sale, and was called in the trade snake wire. I offer in evidence a sample of this wire. which I found in the store of the Western Electric Manufacturing Co.

(Said exhibit is marked "Complainant's Exhibit Snake Wire No. 1, C. A. S.")

I also offer in evidence a sample of wire which I had made at the factory of the Western Electric Manufacturing Co., yesterday, and which is similar to the "Exhibit Snake Wire No. 1."

(Said exhibit is marked "Complainant's Exhibit Snake Wire No. 2, C. A. S.")

About this same time an office wire was extensively used, in which the outside covering was wound with cotton, and in which the insulation had been improved by immersing the cotton-covered wire in a bath of hot paraffine. This wire was called paraffined office wire, and was sometimes called "C. C. office wire." I offer in evidence a sample of wire which is a fair sample of the paraffined office wire I have mentioned. This wire was extensively used until some time in the year 1872. With the exception of gutta-percha-covered office wire, the samples I have offered in evidence are the only styles of office and annunciator wire with which I was acquainted until some time in 1872.

101 (Said exhibit is marked "Complainant's Exhibit, Paraffined Office Wire, C. A. S.")

In the summer of 1872 Joseph Olmstead, of Providence, R. I., called to my notice a new style of office wire, the surface of which was smooth and hard and glossy. I had never before seen any wire with these characteristics. The wire had been covered with braided cotton and treated with paraffine or wax, and afterward the surface made hard and polished. This wire very soon afterward came into extensive use, and was known as polished and compressed office wire. I offer in evidence a sample of this wire.

(Said exhibit is marked "Complainant's Exhibit Coil of Compressed and Polished Wire, C. A. S.)

Up to the year 1872 the painted wire and snake wire and paraffined office wire, like the exhibits, were very extensively used. But since the year 1872 there has been very little call for these wires, and the polished and compressed wire has practically taken their place in the market.

Q. 5. What can you say in regard to the amount of paraffine or wax which is thrown off by the compressing and polishing machine?

A. The amount depends a good deal on the treatment of the wire. If the bath of paraffine or wax in which the wire is placed is a hot one, and the wire is allowed to cool and drain in a warm place, the amount will be less than otherwise. In cooling paraffine wax drains off to a certain extent, and in places settles on the wire in drops or in small chunks. When there is none of this excess of paraffine which I have mentioned—when it is passed through the compressing and polishing machine—a greater amount of the paraffine or wax is thrown off by the machine. I offer in evidence a piece of paraffined wire, taken from a large coil in the manufactory of our company, to show how the paraffine may settle in drops or chunks, so that the amount is excessive.

102 (Said exhibit is marked "Complainant's Exhibit Wire with Chunks of Paraffine.")

The coil of wire marked "Complainant's Exhibit Coil of Compressed and Polished Wire," was treated by me in the usual manner after being paraffined, and the total amount of excess of paraffine which was thrown off was less than one ounce; the finished coil weighs about six pounds and ten ounces.

Q. 6. How much paraffine is left in the coil of wire?

A. I find that generally there is about one pound of paraffine to six pounds of finished wire. I am not able to state the exact amount which was left in this coil.

Q. 7. Have you the polisher which was used in the manufacture of this wire; if so, please produce it and make it an exhibit?

A. I have, and I now produce it. (Said exhibit is marked "Complainant's Exhibit Wire Polisher, C. A. S.")

Q. 8. State how the wire is treated with the polisher.

A. The wire had previously been covered with cotton and treated with paraffine, and allowed to cool in the usual manner. It was then gradually drawn through the polisher, which is exhibited, by means of reels from the end of the spindle on which the thread is cut, through the end of the elastic spring die or polisher. As the wire was drawn through the polisher, which is exhibited, the polisher was rapidly revolved around the surface of the wire. The adjustment of the polisher is the same as when the wire was polished, which has been exhibited in a coil.

(Witness is here shown "Defendant's Exhibit Dundonald's Patent.")

Q. 9. What can you say of the opinions of distinguished electricians, as published in the Journal of the Society of Telegraph Engineers, volume 5, No. 13, pp. 26 and 27, of 1876, as to the utility of the insulated wire described in Dundonald's patent?

Objected to, as calling for hearsay evidence.)

A. I find that in a discussion held January 26th, 1876,
103 on a paper on underground telegraphs previously read before that society, Mr. C. V. Walker, F. R. S., the president of the society at that time, said: "We are much obliged to Mr. Adams for his remarks as to the value of asphalt. It reminds me of days gone by, when Lord Dundonald, the Lord Cochrane of history, made some experiments in covering wires with asphalt. His lordship had a large property in Trinidad, where bitumen abounded, and various experiments were made, with a view of testing its adaptability to telegraph purposes. I myself, in 1853, tried some wires covered with that asphalt. I did not test them in a scientific manner—roughly only; in due course they perished. I believe Mr. Latimer Clark has had some experience in the use of asphalt, and he will perhaps be good enough to state what the result was."

I find that Mr. Latimer Clark, answering, as reported in the proceedings on page 27, stated, beginning with the eighth line from the top of the page: "With regard to asphalt, Lord Dundonald's idea was to cover copper with a kind of asphalt which came from his extensive bitumen lakes in the island of Trinidad. This material failed, partly by reason of its impurity, and partly because it was so soft that the wires readily forced themselves through it to the surface."

Mr. Latimer Clark had been president of the Society of Telegraph Engineers the year before, and both himself and Mr. Walker have for very many years been very prominent in telegraph and electrical matters in England.

The Society of Telegraph Engineers is an English society, having its headquarters in London, and has a membership of about a thousand telegraph engineers, both English and foreign.

(Defendant's counsel admits that the witness has correctly quoted from the publication above described, but does not thereby waive his objection to it as testimony, the said quotation, however,
104 to have the same effect as though the said publication were offered in evidence and produced in court.)

Cross-examination by defendant's counsel:

C. Q. 10. In what capacity were you serving with Gray & Barton in 1870 to 1872?

A. I kept their books, and had charge of their shipping and sales department.

C. Q. 11. Were you continuously in Chicago during that time?

A. I was continuously with them in Chicago from the summer of '70 until the summer of '72, when their business was succeeded to by the Western Electric Manufacturing Company.

C. Q. 12. Your knowledge of what wire was used for electric purposes was such as you gained while in Chicago in that service, was it not?

A. During that period, it was.

C. Q. 13. Prior to your service with Gray & Barton in 1870, had you given any attention to the subject of insulated telegraph wire?

A. I had not.

C. Q. 14. Have you any knowledge of the Society of Telegraph Engineers of which you have spoken, except what you have read in publications?

A. Yes, sir; I am myself a foreign member of that society.

C. Q. 15. When and how did your membership commence with that society?

A. I was in London in the fall of 1873. Mr. John Muirhead, then connected with Warden, Muirhead & Clark, of London, who was then a member of the society, offered to propose my name for membership in that society, which offer I accepted, and have since then continued in my membership.

105 C. Q. 16. Would not the quantity of paraffine or wax thrown off from the wire by the polisher depend something upon the adjustment of the polisher you have shown?

A. To a small extent, I suppose it would.

C. Q. 17. In the coil of wire produced, which you state was run through the polisher produced, adjusted as shown, was the covered wire allowed to remain in the melted paraffine, and then taken out as a coil and cooled; or was it, as it came from the melted material, run through a die or any device for the purpose of removing any portion of the paraffine while warm?

A. The wire was taken from the melted paraffine and allowed to cool in the coil. It was not run through any die or device for the purpose of removing any portion of the paraffine while warm, or afterward. It was passed through the polisher with all the paraffine on it, which would naturally stick to it in the operations I have described.

C. Q. 18. Would the wire, before dipping, but with the cotton covering on it, fill the groove between the two arms of the polisher which you show?

A. It would; and had the wire been placed between the jaws, it would have spread them out so that they would be farther apart than they would be when there was no wire in them.

The further taking of testimony is hereby adjourned until tomorrow, Friday, April 1st, 1881, at 10 o'clock a. m., at same place.

Met pursuant to adjournment at same place. Present, same as before.

Redirect examination:

R. D. Q. 19. Have you observed the operation of the polishers upon wire when adjusted loosely, and also when adjusted somewhat rigidly to the wire? If so, please state what you have observed with reference to the amount of wax removed.

106 A. As a general thing, the more the pressure on the wire the better the polish. The polishing machine should not, however, be adjusted with enough pressure to twist the wire or the fibrous covering. I have not made any special observations as to whether more paraffine is thrown off under one adjustment than under another.

R. D. Q. 20. Generally, how does the paraffine seem to be thrown off, as you have observed the operation of the polisher?

A. At times, when wire is passing through the polisher, more paraffine is thrown off than at other times. When the amount of paraffine on the surface of the wire is excessive, a considerable amount of paraffine, speaking relatively, is thrown off; at times the wire will run through a considerable distance without any being thrown off. I have frequently watched the operation of the machine, and find that very little is thrown off except when the amount on the surface of the wire appears to the eye to be excessive.

Recross-examination.

R. C. Q. 21. How does the difference of quantity of paraffine adhering to the wire occur or arise?

A. The coil of wire is taken from the hot paraffine in a dripping state, and some of the excess of paraffine will settle and cool in chunks, or otherwise, on the surface, so as to become excessive. This is due, I suppose, to a large extent, because, the wire being coiled, the different convolutions hinder the free draining off of the paraffine.

R. C. Q. 22. Would the temperature of the liquid into which the wire is dipped, in any way vary the quantity adhering on the outer surface of the braided wire?

A. I think that both the temperature of the liquid and the temperature of the air, after the coil was taken from the liquid, would have some influence on this.

107 R. C. Q. 23. The process of manufacture and the results obtained, as stated by you, and the tool or machine for polishing, as put in evidence by you, are the processes and implements used under your direction in the works of the Western Electric Manufacturing Company in Chicago, and the results there obtained, are they not?

A. They are.

R. C. Q. 24. Do you have under your polishing machines any vessel or box to catch the surplus paraffine thrown off during the process of compressing or polishing?

A. There is a plate of metal under the machine, placed at an angle, so as to guide these pieces to the front of the machine. Considerable of it remains on this plate.

MILO G. KELLOGG.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Republic.

Testimony of Leroy B. Firman

LEROY B. FIRMAN, the next witness on behalf of complainant, being first duly sworn, deposes and says, in answer to interrogatories propounded to him by counsel for complainant, as follows, viz:

Q. 1. What is your name, age, residence, and occupation?

A. Leroy B. Firman; age, 44; residence, 330 Walnut street, Chicago; occupation, general manager of the American District Telegraph Company.

Q. 2. How long have you been in the telegraph business, and what opportunities have you had for observing the different styles of insulated office and annunciator wires?

A. I have been in the telegraph business about 23 years. I have had about the same facilities for observing wire mentioned that other superintendents of telegraph have had.

108 Q. 3. What facilities have you had and are you familiar with the various styles of this wire that have been in use for the last 23 years?

A. I have tried to keep myself posted on the different kinds of insulated wire, and I think I have succeeded reasonably well.

Q. 4. Please state particularly what kinds of insulated office and annunciator wire were in use prior to 1872, and illustrate by the exhibits now shown you.

(Witness is here shown the exhibits introduced by witness Kellogg.)

A. The only office wire that I knew of, except gutta-percha, prior to 1872, was ordinary cotton-covered wire, dipped in shellac, paint, and other substances, similar to Complainant's Exhibit Snake Wire No. 1, and to Complainant's Exhibit Painted Wire, and Complainant's Exhibit Snake Wire No. 2, and Complainant's Exhibit Cotton-covered Wire. I don't think I ever saw any paraffine wire like Complainant's Exhibit Paraffined Office Wire prior to 1872.

Q. 5. What kind of wire came into general use about 1872? Please illustrate by reference to exhibit.

(Objected to, so far as the question calls for an answer bearing upon the utility of the wire claimed under the patent.)

A. About that time cotton-covered wire soaked in paraffine and then put through some sort of a polishing process seemed to come into general favor. We began to use it extensively and almost exclusively in our business, such as "Complainant's Exhibit Coil of Compressed and Polished Wire." I don't see any other here.

Cross-examination:

C. Q. 6. Has your residence and businesss been continually in Chicago the 23 years named in your answer.

A. Since 1865 I have been in Chicago. Prior to that I was an operator on a wire leading into Chicago.

109 C. Q. 7. How long have you been acting as general manager of the American District Telegraph Company of Chicago?

A. Ever since its organization, which I think was in 1872 or 1873.

C. Q. 8. Prior to that time what was your occupation in Chicago?

A. I was president of the American Private Line Telegraph Company and general western agent of the American Fire-Alarm Telegraph; also superintendent of the Metropolitan Telegraph Company.

LEROY B. FIRMAN.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Public.

Whereupon, CHARLES H. SUMMERS, the next witness called on behalf of complainant, being first duly sworn, deposes and says, in answer to interrogatories propounded by complainant's counsel, as follows, viz:

Q. 1. What is your name, age, residence, and occupation?

A. Charles H. Summers; age, 43; residence, Highwood, Lake Co., Ills., but do business in Chicago; occupation, electrician for central division of the Western Union Telegraph Company.

Q. 2. How long have you been in the telegraph business, and what opportunities have you had to become acquainted with different styles of insulated office and annunciator wire?

A. I have been in the telegraph business about 26 years. Fifteen years of that time first as a superintendent of telegraph and then as an electrician. My opportunities for observation were very good during that fifteen years.

110 Q. 3. What kinds of wire were in use prior to 1872? Please illustrate by the exhibits now shown you.

A. My recollection is that, up to 1871 or 1872, common cotton-covered office wire, without any wax or other preparation on it, and what was known as snake-covered wire, which had a coat of varnish over the cotton, were principally used. It was a wire similar to "Complainant's Exhibit, Paraffined Office Wire," except it had no paraffine on it, but some of this was paraffined. But most of it that was in use was covered with paraffine. Both kinds of wire were used, both with and without paraffine. Wire similar to that was used. (Witness here points to a coil of wire, and the same is introduced in evidence and marked "Complainant's Exhibit, Large-sized Varnished Wire, C. A. S."

Some of this was used, too, with paraffine. I am speaking of the insulation—not the size of the wire. (Witness introduces said wire in evidence, and the same is marked "Complainant's Exhibit, C. C. Wire, C. A. S.") There were other kinds of insulated wire besides your samples that were used.

Q. 4. What kind of wire, if any, came into general use about 1872, '3, or '4?

(Objected to, so far as the question calls for an answer bearing upon the utility of the patented wire claimed.)

A. The next improvement in insulated wire over the wire referred to previously was a paraffined wire polished. The date it came first into use I cannot fix exactly. I don't think I ever saw any of it before 1872, although I was handling office wire constantly.

Q. 5. What are the characteristics of the polished wire you refer to?

A. A wire that has been run through some kind of machinery by which the fibres of the cotton are laid down compactly, and
111 by pressure the paraffine fills in the crevices, making it more securely an insulator, and whereby the surface is polished, which, of itself, would tend to improve its insulating quality.

Q. 6. If you see any of this polished wire before you, please point it out.

A. I should say that (referring to complainant's Exhibit, Coil of Compressed and Polished Wire,) had been run through a polishing machine, or chuck—I don't know which you would call it.

(Cross-examination waived.)

CHAS. H. SUMMERS.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Public.

Whereupon, FREDERICK H. TUBBS, the next witness called on behalf of complainant, being first duly sworn, deposes and says, in answer to interrogatories propounded to him by complainant's counsel, as follows, viz:

Q. 1. What is your name, age, residence, and occupation?

A. Frederick H. Tubbs; age, 47; 110 Dearborn ave., Chicago; occupation, district superintendent of the Western Union Telegraph Company.

Q. 2. How long have you been in the telegraph business, and what opportunities have you had for becoming familiar with the different styles of insulated office wire.

A. Thirty-two years. At least, average opportunities. I have purchased it, more or less, for 16 or 18 years.

Q. 3. What kinds of wire were in general use prior to 1872?

A. I can't state as to that year, positively, as to what was in use before or immediately after that. My recollection as to dates is so imperfect that I can't say, as to 1872, what was in use before it or after it.

112 Q. 4. Mention some of the kinds of wire that were in general use from 1865 to 1872, according to the best of your recollection.

A. I would be unwilling to swear as to dates; the first office wire I think, however, I knew of, or among the first, and I have more or less knowledge of it to date, was a cotton-covered wire, sometimes

soaked or dipped in paraffine, perhaps other oils, and later on was improved in different ways, some being braided and some wrapped, as to the covering.

Q. 5. Where were you and what was your business from 1870 to 1873?

A. Living at Galesburg, Illinois; superintendent of the *the* telegraph of the Chicago, Burlington & Quincy Railroad.

Q. 6. During that time was your attention called to any improvement in insulating office wire; if so, state what such improvement was, and who called your attention to it?

A. I can't give the exact date, but remember Joseph Olmstead showing me samples of some improved wire of his make, or claiming it to have been of his make or invention.

Q. 7. Did you buy any of it?

A. Yes, sir.

Q. 8. How did that wire differ from what you had known before?

A. Apparently it had been subjected to quite a pressure—hardened. It would retain its form, not fray out as the old covering would. I considered it better as to insulation, and lasting.

Q. 9. What can you say of its surface?

A. It had a polished, hard surface, likely to withstand the wear and tear of office use longer than any wire I had before had.

Q. 10. Of what did the covering consist?

113 A. It was cotton-covered, soaked in paraffine, then hardened and polished on the surface.

Q. 11. Do you see any wire like the Olmstead wire before you?

A. Yes, sir; that's the wire, (referring to Complainant's Exhibit, "Coil of Compressed and Polished Wire.")

(An objection is made to all the testimony of this witness as to utility, and to all that is not in reply or in rebuttal to testimony and proofs put in by the respondent.)

(Cross-examination of the witness waived by defendant's counsel.)

F. H. TUBBS.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Public.

Testimony of James S. Dickinson.

Whereupon James S. Dickinson, the next witness, being duly sworn, deposes and says, in answer to interrogatories propounded to him by complainant's counsel, as follows, to wit:

Q. 1. What is your name, age, residence, and occupation?

A. James S. Dickinson; age, 41 years; residence, 4330 Greenwood avenue, Hyde Park, Illinois; occupation, store keeper, Western Union Telegraph Company.

Q. 2. What was your business from 1869 to 1873?

A. From 1869 to 1872, I was bookkeeper and salesman for Bliss, Tillottson & Co.; they dealt in telegraph goods of all kinds.

Q. 3. During this time did you become acquainted with the different styles of insulated office-wire that were in the market?

A. Yes, sir.

Q. 4. What were they?

114 A. There were several kinds then in the market. We had what was called the cotton-covered wire, the same covered with paraffine; also, what was called the snake wire, the insulating proprieties of which were shellac or some other hard gum. Then this cotton-covered wire, also, was painted. I believe those are the only kinds that I have any recollection of now.

Q. 5. When was your attention called to any wire different from this that you have described?

A. I should say eight years ago. It was first called to a very smooth, polished wire, which was being used by the Gold and Stock Telegraph Company.

Q. 6. What has been your business since 1872?

A. Chief clerk of the supply department of the Western Union Telegraph Company up to within about fifteen hours. Since that time I have been store-keeper.

Q. 7. What territory of the United States occupied by the Western Union Telegraph Company receives its supplies from the store now under your charge?

A. West of New York State and the western part of Pennsylvania, and all the territory lying north of the Ohio river, except such territory as is occupied by the Northwestern Telegraph Company, and all territory lying west of the Mississippi river, north of Texas.

Q. 8. Do the telegraph supplies of railroads pass through your store?

A. Of most of the railroads, they do. We have contracts with most of the railroads.

Q. 9. What styles of office wire have passed through this store for the last 5 or 6 years?

A. The largest amount has been the smooth, polished, braided office wire. We have issued a small quantity, also, of cotton-covered paraffined wire, a small wire.

(The last question and answer are objected to, as not in reply to any proofs put in by respondent, and also as bearing upon the question of utility.)

115 Q. 10. With what is the smooth, polished, braided office wire insulated?

A. The insulators used are paraffine, bees-wax, japan wax, and baberry wax.

Q. 11. What territory is occupied by the Northwestern Telegraph Company?

A. Wisconsin, Minnesota, and the Northwestern portion of Michigan.

Cross-examination waived.

JAS. S. DICKINSON.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Public.

Testimony of Enos M. Barton.

Whereupon, Enos M. Barton, the next witness for complainant, being first duly sworn, deposes and says, in response to interrogatories propounded by complainant's counsel, as follows:

Q. 1. What is your name, age, residence and occupation?

A. Enos M. Barton; age 38 years; residence, Chicago; occupation, secretary of the Western Electric Manufacturing Co.

Q. 2. How long have you been in the telegraph business?

A. Altogether, between twenty-six and twenty-seven years. Previously to 1868, as telegraph operator; since that time, engaged in the manufacture of electrical apparatus.

Q. 3. Are you acquainted with the different styles of insulated office wire that were in use prior to 1872? If so, what were they?

A. Copper wires insulated with gutta percha were used to a limited extent. In the early days of telegraphy, copper wires with a
116 woven covering of coarse thread were used; this covering was objectionable in that it slipped easily on the wire. Afterwards wires covered with coarse threads, either wound or braided upon the conductor, and the covering saturated or filled with insulating materials, like gums and wax, were commonly used, covering the period from 1858, or earlier, up to 1872. During the greater part of this period, I was employed in telegraphic service in different offices, and visited a large number of other offices, and think that I know pretty well the different styles of wires used. In many cases I ran the wires in the offices myself.

Q. 4. When was your attention called to any improvement in office wire, and what was the improvement, if any?

A. During 1872 there was offered to us for sale wire with a wound and braided covering of thread which had been treated with insulating material like that referred to in my former answer, but which had a polished surface.

Q. 5. By whom was said wire first shown to you, and where?

A. By Joseph Olmsted, then of Providence. He showed me samples of this kind of wire both here and in New York, at about the same time. My impression is that he first showed it here in Chicago, and shortly afterward when I happened to be in the office of the Gold and Stock Telegraph Company in New York city.

Q. 6. Did you buy any?

A. Yes. We gave him an order as soon as we saw the samples.

Q. 7. How has this wire been received by the trade since that time?

A. This style of wire has, from about that time, been preferred by almost every one, and has been almost exclusively used.

(All questions and answers bearing upon the question of
117 utility and all testimony not in reply to testimony and evi-

dence introduced by the respondent is objected to, whether in the testimony of the last witness or any preceding witness at this examination.)

(Cross-examination waived.)

ENOS M. BARTON.

Subscribed and sworn to before me, this 1st day of April, A. D. 1881.

C. A. SAWYER,
Notary Public.

(Complainant's counsel states on the record that he waives objection to the introduction of certified copy of the patent of Edward Maynard, referred to by defendant's witness, L. W. Serrell, and also that he waives his objections, as entered, to questions 25 and 29, propounded to the witness, L. W. Serrell, March 17th, 1881.)

117½ And on the 12th day of December, 1881, the said cause was fully argued by counsel for the respective parties before said circuit court, and on the 21st day December, 1881, the following opinion of court was filed therein, viz:

Circuit Court of the United States, for the District of Connecticut.

118 WESTERN ELECTRIC MANUFACTURING COMPANY
vs.
ANSONIA BRASS AND COPPER COMPANY.

SHIPMAN, *J.:*

This is a bill in equity, founded upon the alleged infringement of two reissued letters patent granted to the plaintiff as assignee of Joseph Olmsted, each for an "Improvement in Insulating Telegraph Wires," and dated February 29th, 1876, and respectively numbered 6954 and 6955, and being reissues in two divisions (one for the process and the other for the product) of a patent granted to said Olmsted on July 23d, 1872.

The specifications of each reissue are the same, and accurately describe the patented improvement upon the method which was then commonly used for insulating office wire. The entire descriptive part of the two specifications is in these words:

119 "The method of insulating now in use consists in braiding over the wire a fibrous covering, after which it is dipped in wax, for the purpose of filling and closing its pores, and, after a subsequent scraping to remove the surplus wax, it is ready for use. This method is, however, objectionable, inasmuch as it leaves the covering in a very rough and soft condition, and fails to secure perfect insulation.

In my improved method, after the wire has received its coating, I dip it in paraffine or wax, after which, instead of scraping off the surplus coating, I pass the whole through a suitable machine, which

compresses the covering and forces the paraffine or wax into the pores, and secures perfect insulation. By so compressing the covering the paraffine or wax is forced into the pores, and the surface becomes and appears polished.

Wire insulated in this manner is entirely impervious to the atmosphere, of greater durability, and less cumbersome than any heretofore made."

120 The claim of the process patent is for "the method of insulating telegraph wire by first filling the pores of the covering, and subsequently compressing this covering, and thereby polishing its surface, substantially as described."

The claim of the patent for the product is for "an insulated telegraph wire, the covering of which has its pores filled and its surface polished substantially as described."

The defect in the article coated with uncompressed paraffine was a leakage of electricity, which was probably owing to the shrinkage of the paraffine in the interstices of the fibrous covering while the melted paraffine was cooling. The paraffine which was compressed while in a plastic state was thereby forced into the interstices of the fibres, and the defect was obviated.

The defendants make and sell telegraph wire which they say, in their answer, is "covered by braiding over the wire a fibrous covering, after which it is dipped in a preparation for the purpose of filling and closing the pores, after which the same is sandpapered

121 and rubbed and passed through revolving dies for the purpose of scraping off the surplus material and consolidating and smoothening the surface of said remaining covering." They further admit that both paraffine and wax are component parts of the material which is used for insulating their wire.

I shall spend no time upon the question of infringement which I think was clearly shown. The utility of the plaintiff's article was also proved.

The important question in the case is in regard to the patentability of the improvement, which consisted in compressing the plastic paraffine, by suitable machinery, after the fibrous covering and the paraffine had been applied. The mechanism for compressing was so well known that a description was unnecessary. The invention consisted in the discovery that compression of the plastic paraffine into the pores of the fibrous covering, by any well-known mechanical appliances, would be advantageous. It did not consist in the discovery that covering with paraffine or wax would be desirable, for wire covered with braided fibrous covering and dipped in

122 wax was in common use, but the invention simply related to the substitution, in place of a mere scraping off of the rough clots of wax of a pressing operation for forcing the insulating material into more intimate contact with the fibrous material, and so far as the product is concerned the invention related to a wire insulated and polished upon its surface, by means of compression of the waxed covering, as distinguished from the insulation and surface which was the result of non-compression of the same covering.

Dundonald's British patent of 1851, No. 13698, declares that he

employed "bituminous material to cover and thus insulate the conducting wires of electric telegraphs which are intended to be placed underground" * * *. He further says, "the incasement of this wire with bitumen may also be effected by covering it with a filamentous material which has been previously saturated with melted bitumen, and then pressing the wire so covered through a heated die or orifice, so as to melt or soften the bitumen upon the filamentous ma-
123 terial, and press the whole of the coating against the wire in such a way as to cause it to form one compact, continuous covering of the wire, and thus insure its insulation." The same general process of compression is found in Bandorein's British patent, No. 933, of 1857, for electric conductors. The specification says: "The wire is passed through a bath of hot bitumen, and has the superfluous matter removed by passing through suitable dies or parts to scrape and smooth its surface and render it of uniform thickness. The first and second ribbons" (which are strips of material to be wound on the wire) "are also passed through bituminous or other suitable matter to render them more impervious to electricity. The coated and lapped wire is passed through suitable dies, to remove superfluous matter, to smooth down the lapping of the ribbons, and to compress and cause their proper adhesion." It thus appears that the process of compression had been used for some years before the date of Olmsted's patent, in the manufacture of electric telegraph wire previously covered with cloth, and then coated
124 with bitumen or fatty substances, and, having been used, there is no longer patentability in compressing the paraffine covering of a wire coated with fibrous material.

The patented process "was simply the application by the patentee of an old process to a new subject, without any exercise of the inventive faculty, and without the development of any idea which can be deemed new or original, in the sense of the patent law." (Brown *v.* Piper, 91 U. S., 37.) The patentee took the process of Dundonald and of Bandorein, which they had applied to bitumen, and applied it to the wax covering which was in common use, and had been found to be superior for certain classes of wire to any insulated covering which had been previously used or suggested. The old process was applied to the new use without substantial alteration or change. The process patent not stating a patentable invention, the product patent is in no better condition.

The bill is dismissed.

WM. D. BALDWIN AND
GEORGE P. BARTON,
For the Plaintiff.

WM. B. WOOSTER,
For the Defendant.

125 And on the 9th day of January, 1882, the following final decree was made and entered in said cause, viz:

Circuit Court of the United States for the District of Connecticut.

At a term of the circuit court of the United States of America for

the district of Connecticut, held at the city of Hartford in said district on the 9th day of January, in the year of our Lord one thousand eight hundred and eighty-two.

Present: The Honorable Nathaniel Shipman, district judge.

WESTERN ELECTRIC MANUFACTURING COMPANY
v.
ANSONIA BRASS & COPPER COMPANY.

This cause came on to be heard upon the bill of complaint herein, the answer thereto, and replication to such answer, and the proof taken and filed in said cause, and having been argued by counsel for the respective parties:

126 Now, therefore, on consideration thereof, it is ordered, adjudged, and decreed, and the court doth hereby order, adjudge, and decree, as follows, viz: That the complainant's bill of complaint herein be, and the same is hereby, dismissed, with costs to the defendant to be taxed.

N. SHIPMAN,
District Judge.

127 I, Edwin E. Marvin, clerk of the United States circuit court for the district of Connecticut, do certify that the foregoing is a true return of the record in said court in the cause of Western Electric Manufacturing Company against Ansonia Brass and Copper Company.

In witness whereof, I have set hereto my hand and the seal of said court, at Hartford, in said district, this 31st day of May, A. D. 1882.

[SEAL.] E. E. MARVIN, *Clerk.*

Endorsed on cover: Connecticut C. C. U. S. No. 227. The Western Electric Manufacturing Company, appellant, *vs.* The Ansonia Brass and Copper Company. Filed 29 June, 1882.